OCTOBER 14, 1944

Railway Age

Founded in 1856

THE LIBRARY OF CONGRESS
SERIAL RECORD
NOV 11 1944
COPY
GIFT

CHICAGO AND NORTH WESTERN LINE

OVER

9,000,000 Miles!

9 LOCOMOTIVES!

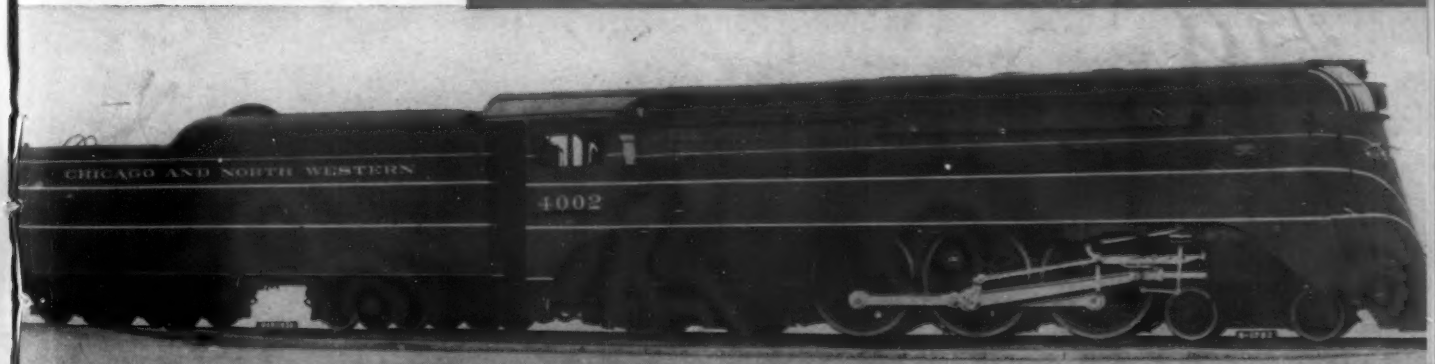


PHOTO COURTESY AMERICAN LOCOMOTIVE CO.

OVER 1,000,000 MILES AVERAGE PER LOCOMOTIVE

NOT A SINGLE DELAY DUE TO TIMKEN BEARINGS ON THESE 9 C. & N. W. RY. LOCOMOTIVES WHICH ARE EQUIPPED ON ALL DRIVING AXLES AND TRAILER TRUCKS WITH TIMKEN BEARINGS!

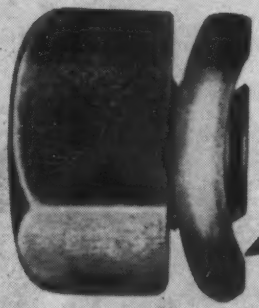
TIMKEN
TRADE-MARK REG. U. S. PAT. OFF.
RAILWAY ROLLER BEARINGS

The C. & N. W. Ry. is now engaged in a program of converting to TIMKEN BEARINGS 35 type 4-8-4 locomotives in their own shops. The Timken Roller Bearing Company, Canton 6, Ohio.

Reliance HY-CROME Spring Washers

THE HY-CROME FAMILY

LOCOMOTIVE HY-CROME

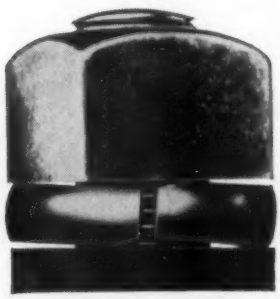


HY-CROME SPRINGLOX

HY-PRESSURE HY-CROME

HY-CROME PRESSURE SPRING
20,000 LBS. TO COMPRESS
1" BOLT

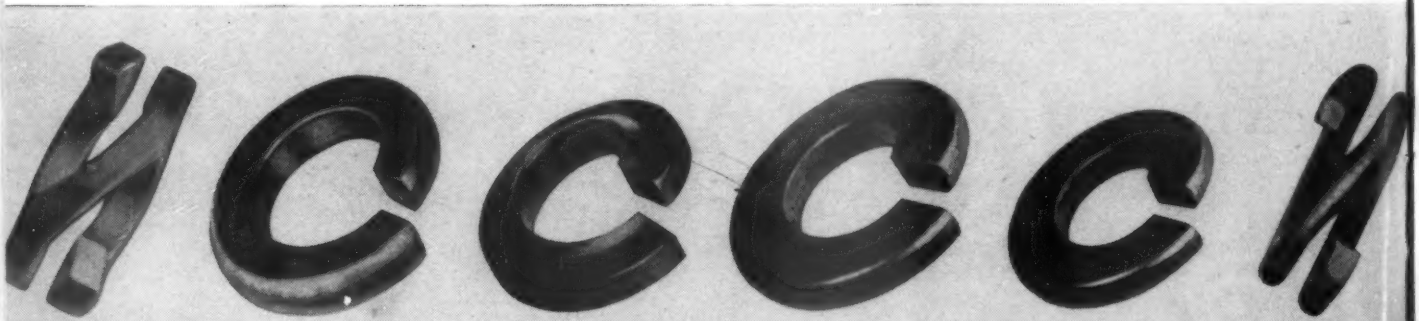
Hy-Crome Spring Washers provide an efficient, economical, and automatic method of guaranteeing adequate bolt tension in spite of wear and bolt elongation. A type of Hy-Crome has been designed for each specific application.



HY-CROME PRESSURE SPRING
6,500 LBS. TO A.R.E.A. SPECS.
1" BOLT

MEMBER
THE TRACK SUPPLY ASSOCIATION TSA

The opportunity to greet many of our railroads' friends at the Roadmasters Convention, as has been our custom, will be very much missed this year. We wish, therefore, in this way to extend our congratulations on the handling of a tremendous and difficult war transportation job. The urgent necessity for regular and uninterrupted passenger and freight service has been keenly realized, and the meeting of this war obligation with reduction in personnel and maintenance materials has been a noticeable accomplishment. Industrial plants have been awarded the Army-Navy "E" for such service. The American Railroads certainly are entitled to national recognition for their outstanding war service and our praise is high and our hats are off to those men who have made the achievement of these objectives possible.



DOUBLE HY-CROME STANDARD HY-CROME RIB HY-CROME FROG & CROSSING HY-CROME HY-REACTION HY-CROME THACKERAY HY-CR

EATON MANUFACTURING COMPANY
RELIANCE DIVISION MASSILLON, OHIO
Sales Offices: New York • Cleveland • Detroit • Chicago • St. Louis • San Francisco • Montreal

MINER

Friction Draft Gears

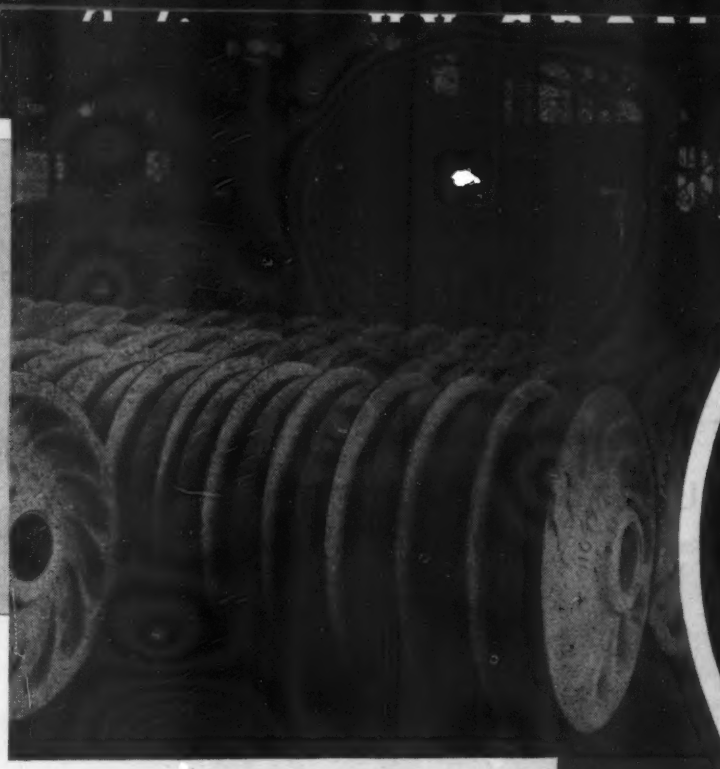
STURDY IN CONSTRUCTION

POSITIVE IN ACTION

ABSOLUTELY RELIABLE

W. H. MINER, INC. CHICAGO

Published weekly by Simmons-Boardman Publishing Corporation, 1309 Noble Street, Philadelphia, Pa. Entered as second class matter, January 4, 1933, at the Post Office at Philadelphia, Pa., under the act of March 3, 1879. Subscription price $6.00 for one year U. S. and Canada. Single copies, 25 cents each. Vol. 117, No. 16.



Keep 'Em Out of the Shop on

The Midwest's most completely equipped wheel foundry.

THESE SEVEN CHECKS CONTROL MT. VERNON QUALITY

1. Chill test block taken at least once in every 10 wheels poured.
2. One complete chemical analysis block with each heat.
3. Constant pyrometer check for accurate processing temperature.
4. Drop test of finished wheel (A.A.R. Specifications).
5. Thermal test of finished wheel (A.A.R. Specifications).
6. Test for perfect rotundity.
7. Instrumental test for Brinell hardness.

Mt. Vernon Chilled Car wheels are bearing their share of the load in America's greatest transportation job—perhaps *more*, because Mt. Vernon wheels are made with the best equipment available, which, together with the Mt. Vernon tradition of quality assures the utmost mileage under the severe conditions of war transportation.

MT. VERNON CAR DIVISION:
Complete Line of Freight Cars

LOCOMOTIVE DIVISION:
Diesel, Diesel-Electric, Electric, Steam, and Fireless Steam Locomotives.

PROCESS EQUIPMENT DIVISION:
Complete Line of Chemical, Food, and Petroleum Refinery Equipment.

QUIMBY PUMP DIVISION:
Screw, Rotex, Centrifugal, Chemical Pumps.

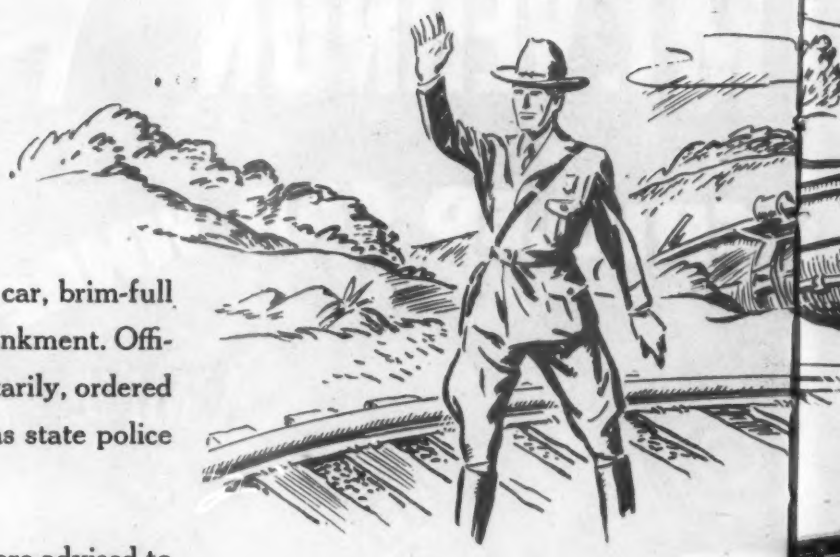
ORDNANCE DIVISION:
Projectiles, Heavy Forgings, Breech Blocks, Winches.

MT. VERNON

Division of H. K. PORTER

MT. VERNON
CHILLED CAR WHEELS
MT. VERNON CAR MFG. CO. MT. VERNON, ILL.
Member
A.M.C.C.W.
"New Wheels for Old"
Exchange Plan
N CAR MFG. CO.
Porter
Equipment

The LEAK that might have



ON a recent run, an a.c.f.-built tank car, brim-full with propane plunged down an embankment. Officials, fearful of an explosion momentarily, ordered cinders and earth shoveled over the tank as state police guarded the over-turned car.

Fuel company representatives on arrival were advised to either transfer the propane to another car or return the cripple to the refinery. A thorough examination revealed however that despite the terrific impact — an impact that seemingly **slated the car for scrap — there was no leakage of the lading!** Hoisted onto a gondola, the car soon resumed its journey under the original bill of lading.

A mystery to some on the scene — but no secret to many operators of a.c.f. automatic, submerged, arc welded tanks is the "reason why" behind this car's **superior protection of cargo.** Time and again, a.c.f. tank cars have **taken it hard** but the know-how gained in 30 years of welding experience has enabled many a shipper and consignee under emergency conditions to **take it easier!**

a.c.f.

WHATEVER a.c.f. BUILDS—IT IS KNOWN TO BUILD WELL!

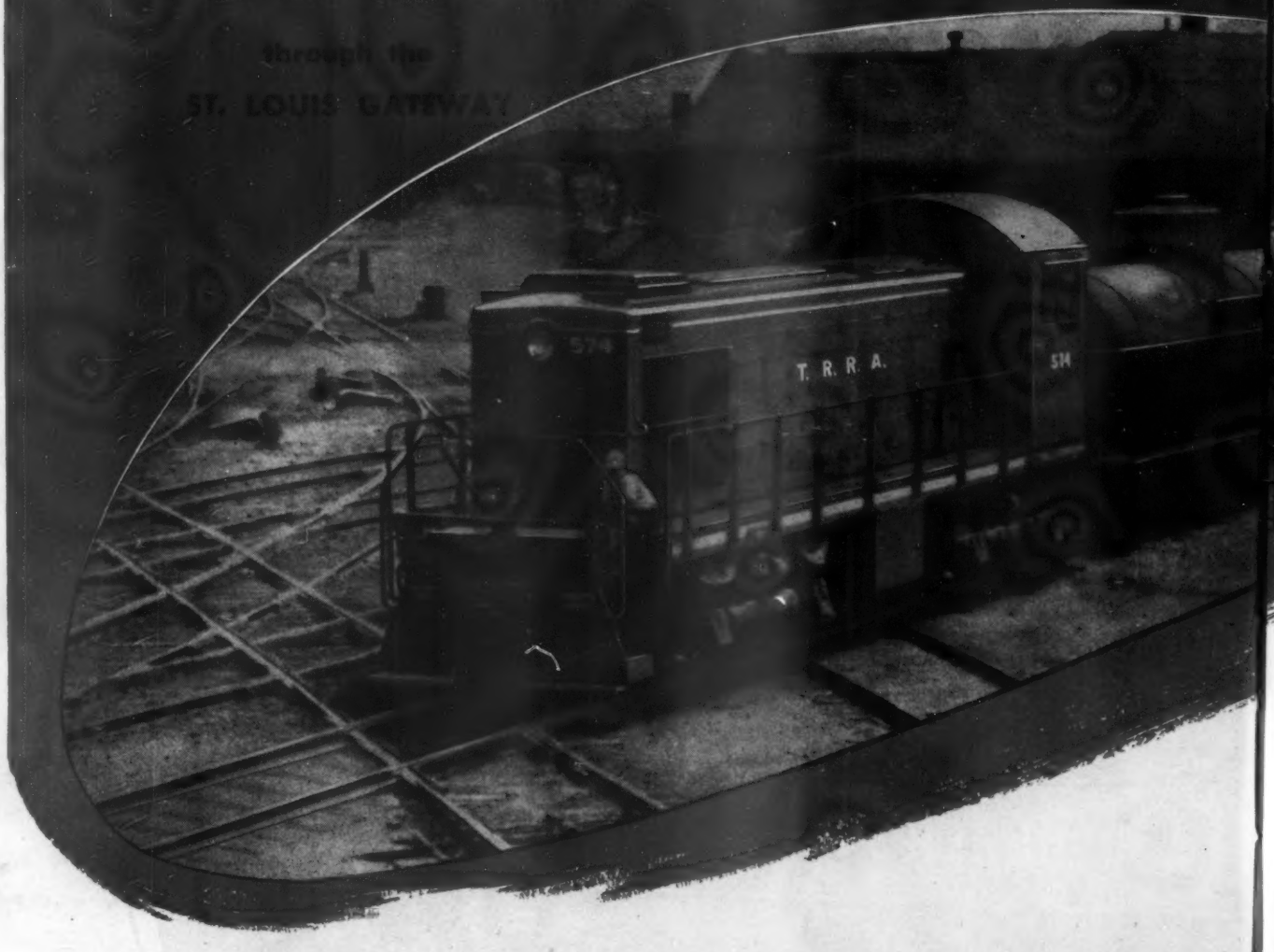
happened but DIDN'T!

CAR AND FOUNDRY COMPANY

CLEVELAND · WASHINGTON · PHILADELPHIA · PITTSBURGH · ST. PAUL · SAN FRANCISCO

225,000 BARRELS

through the
ST. LOUIS GATEWAY



Alco-G.E. diesel-electrics help Terminal Railroad Association reduce operating costs 38% in 1943, compared with steamers. Interchange time of tankers slashed to 3¾ hours!

ONE-THIRD of all eastern seaboard oil is moving through the St. Louis Gateway in a fraction of the time formerly required. Tankers are now interchanged in only three-and-three-quarters hours. This is the result of TRRA's efficient terminal operation—supported by 12 Alco-G.E. diesel-electrics.

Because they are available 95 per-cent of the time, these diesel-electrics permit the TRRA to set up its switching operations in advance of each train's arrival. Their quick response to the throttle and high initial tractive effort are particularly time-saving when long strings of cars must be moved.

In addition to speeding up terminal operations, these diesel-electrics are producing a 38 per-cent saving in operating cost through their low servicing requirements and fuel economies.

The TRRA operation is an example of how Alco-G.E. diesel-electrics can be used to speed the movement of vital war materials and, at the same time, effect important operating economies. We'd like to discuss their application on *your* lines. We build all three types of motive power—diesel-electric, electric, and steam—and can therefore impartially recommend the one which is economically best suited to your particular operation.

OF OIL EVERY DAY--

The best investment in the world is in this country's future—*Keep all the bonds you buy.*

--and 70,000 PASSENGERS EVERY DAY --more than 200 trains

In addition to handling TRRA's tremendous freight traffic through the St. Louis Gateway, these quiet, clean diesel-electrics switch more than 200 passenger trains daily. The elimination of cinders, soot, and disturbing noise is leaving a favorable impression that will be reflected in increased passenger traffic after the war.

Making up a train in TRRA's Madison yard. Two units coupled together operate as a 2000-hp locomotive to handle the long heavy cuts.

Alco DIESEL-ELECTRIC GE

AMERICAN LOCOMOTIVE and GENERAL ELECTRIC

To meet today's needs

Almost 5 tons lighter — but stronger

This COR-TEN, 50-ton all-welded box car, designed and built by Pullman-Standard, will carry over 4½ tons more payload, yet costs no more.

The Division of Engineering Research, A.A.R. conducted impact tests on this car to compare its strength with that of the A.A.R. standard box car, at impact speeds up to 13.3 m.p.h.

Report states: "No defects were detected in the Pullman box car — the stress, in proportion to the yield point of the material, was in general much lower in the Pullman box car than in the A.A.R. car, at practically all speeds of impact."

6,000 COR-TEN hopper cars each weigh 10,000 lb. less

These big capacity, hard-working 70 and 90-ton hoppers can carry 5 tons more payload, and do. Their condition after six years of hard service indicates that they will last as long as heavier copper-steel construction before needing heavy repairs. Built by Pullman-Standard, American Car and Foundry, General American and Pressed Steel Car Co.

Designed to exceed all A.A.R. strength requirements yet weighs 8,500 lb. less

Designed and built by the General American Transportation Corporation, this all-fusion welded 50-ton box car weighs 36,800 lb. Roof, sides, ends, doors and underframe, with the exception of center sill, are of U-S-S COR-TEN. An unusually flexible design readily adaptable to varying requirements.

and tomorrow's competition

— *build freight cars lighter with* U·S·S COR-TEN!

NO alert railroad man needs to be told he is facing a period of postwar competition from other freight transportation media that makes changes in present freight car construction not only desirable but imperative.

That these necessary changes primarily involve the reduction of deadweight—that in lightweight construction with its attendant increase in payload capacity, and reduced operating and maintenance costs the railroads must seek an answer to future competition—any railroad man with his ear to the ground must agree. The facts are too plain to ignore.

For only with *lighter* cars—cars that will carry more payload, that will reduce train tonnage, that permit reduction in number of locomotives, and that will mean less expense for maintenance of both equipment and roadway—is it possible to effect the economies that will permit maintenance of streamlined freight schedules and more frequent and faster service that will attract shippers from other competing forms of transportation after the war.

Now with COR-TEN again becoming available, your new freight equipment can be built light, with little or no increase in cost, to assure you not only top efficiency for today's operations, but to give you worthwhile economic advantages in the tough competition that the end of the war will surely bring.

AMERICAN STEEL & WIRE COMPANY, *Cleveland, Chicago and New York* · **CARNEGIE-ILLINOIS STEEL CORPORATION,** *Pittsburgh and Chicago* · **COLUMBIA STEEL COMPANY,** *San Francisco* · **NATIONAL TUBE COMPANY,** *Pittsburgh* · **TENNESSEE COAL, IRON & RAILROAD COMPANY,** *Birmingham* . United States Steel Export Company, New York

500 box cars each built 7,600 lb. lighter

Built by the Mt. Vernon Car Manufacturing Company, these modern automobile cars, 50'6" long, have a lightweight of 55,000 lb. U-S-S High Strength Steels were used in side structural members and side sheathing.

USS

UNITED STATES STEEL

THIS POST-WAR PLAN
suits everybody

IN THE MIDST of tons and volumes of talk about post-war planning, there's one sensible plan that is *having something practical done about it:* the railroads' expressed purpose to give their passengers greater comfort than they've ever known.

That plan is of keenest interest to Clark; because we expect—and intend—to have a useful part in making that plan a reality.

Built into Products of Clark are 35 years of broad usefulness to Transportation. Built into them are skills and resourcefulness sharpened by making many items of war material, and a basic belief in making as good a product as capable engineering and sound craftsmanship can create.

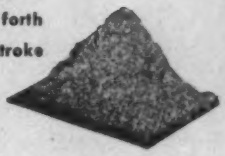
CLARK EQUIPMENT COMPANY

RAILWAY DIVISION - - - BATTLE CREEK, MICHIGAN

Products of **CLARK • INDUSTRIAL TRUCKS AND TRACTORS • BOOSTER UNITS • EASY ROLL TRAILER AXLES AXLES FOR TRUCKS AND BUSES • GEARS AND FORGINGS • ELECTRIC STEEL CASTINGS • METAL SPOKE WHEELS TRANSMISSIONS • AXLE HOUSINGS • RAILWAY TRUCKS • BLIND RIVETS • HIGH-SPEED DRILLS AND REAMERS**

STILL ON YOUR SHAPER FOR 5 HOURS?

Shaper grips the work in a vise, the cutting tool shuttles back and forth cutting on only one cycle. Each stroke makes one chip until the entire section removed is reduced to a worthless heap.



DoALL slices out the part to within .005 of the layout line, leaving the section removed in a solid, usable piece.

DO IT ON THE DoALL IN ½ HOUR

DoALL is the contour sawing machine that is doing such a grand job of (both internal and external) metal shaping, saving hundreds of man hours and thousands of pounds of valuable material. Cuts tubing, blocks, bar stock or stacked sheets.

Here's one machine tool that won't require any change-over adjusting when civilian production is given the full go-ahead signal. So, get set now with one or a battery of DoALLS.

Ask for circular EIGHT DIFFERENT JOBS, illustrating DoALL versatility.

Visit the DoAll Exhibit at the Metal Show Oct. 16 to 20. Cleveland Auditorium

DoALL

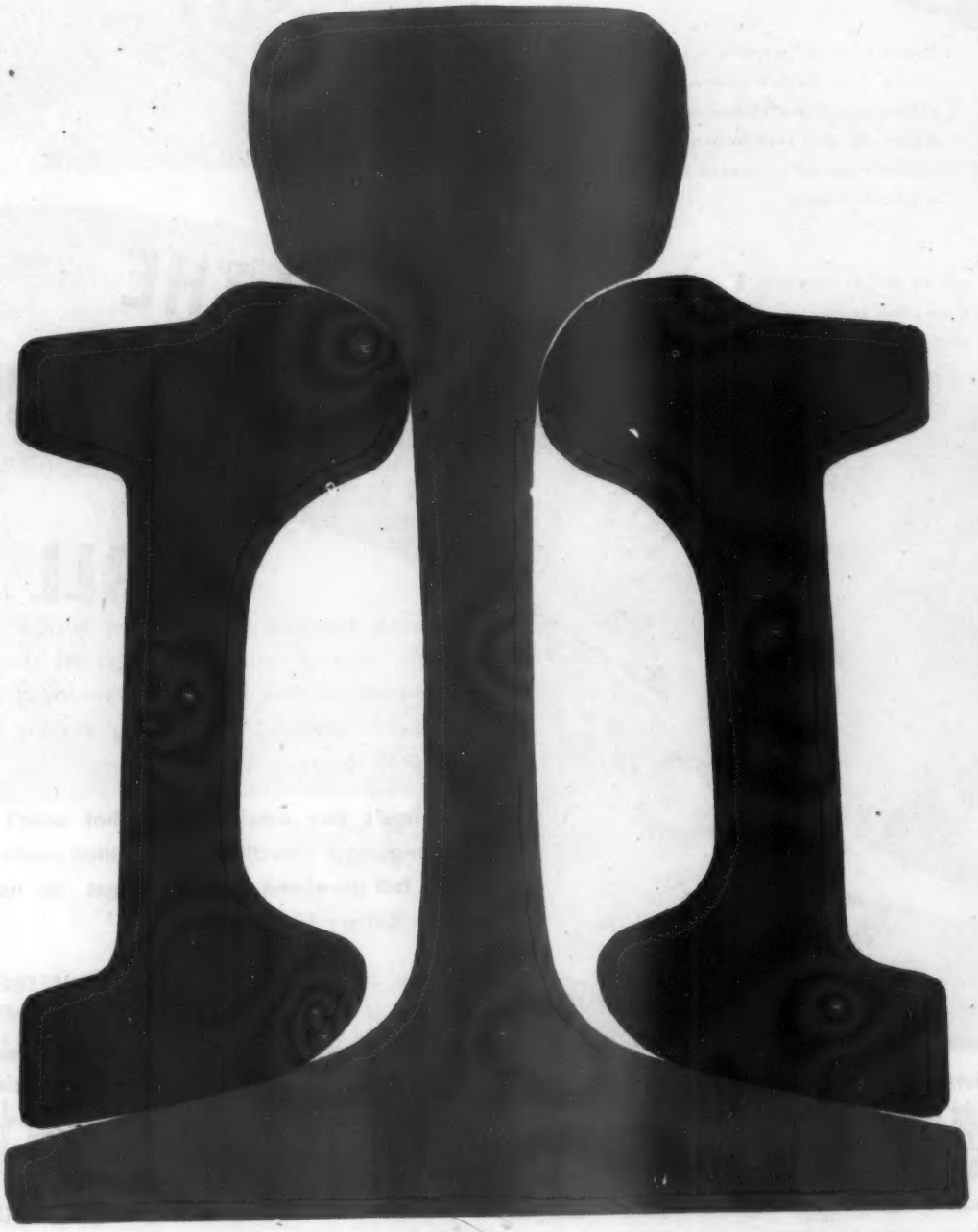
INDUSTRY'S NEW SET OF TOOLS

CONTINENTAL MACHINES, INC.

1345 S. Washington Ave. • Minneapolis 4, Minn.

Sales & Service Offices: Baltimore, Birmingham, Boston, Chicago, Cincinnati, Cleveland, Denver, Detroit, Erie, Grand Rapids, Hartford, Houston, Indianapolis, Los Angeles, Milwaukee, Minneapolis, New York, Orlando, Philadelphia, Pittsburgh, Providence, Rochester, Rockford, St. Louis, San Francisco, Seattle, Toledo, Tulsa.

TORSION RESISTING RAIL



and IMPROVED HEADFREE JOINT

—ADVANTAGES—

Increase in torsional rigidity

Stresses, resulting from lateral and eccentric loads, materially reduced in upper rail web and fillet

A stronger assembly at the railends

Improved rail end condition with increased life at joint bars afforded by enlarged rail head-web connecting fillet

More economical distribution of metal

112-R. E.

Physical Characteristics

112-R. E.		112-T. R.
65.8	Moment of Inertia	67.0
18.1	S.M. Top	17.9
22.1	S.M. Bottom	22.3
112.4#	Weight per yard	112.3#

Intensity of Strain is proportional to the number of lines

112-T. R.

T. R. Rail is in Service on the C. B. & Q. R. R. at Galva, Ill., and Cameron Jct., Mo.

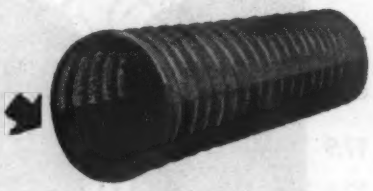
The Rail Joint Co., Inc.

50 CHURCH ST., NEW YORK 7, N. Y.

NO OTHER PIPE gives you ALL THESE ADVANTAGES

This is why Asbestos-Bonded ARMCO Pipe has been cutting maintenance costs on drainage for almost 10 years . . . . .

1



Prevents Bottom Wear

In any drainage pipe the wear is hardest on the bottom. To offset this, Asbestos-Bonded Pipe is reinforced in the bottom with a smooth bituminous pavement. In erosion tests the pavement has lasted four times longer than the specifications required.

2

Does Not Flow Under Summer Heat

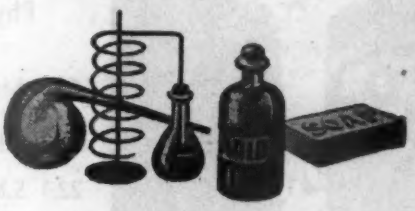
Specimens of Asbestos-Bonded Pipe are heated to 160 degrees F. for four hours. The pavement "flows" less than a quarter of an inch. This temperature is appreciably hotter than unbonded material will stand and higher than actual service conditions.

3

Resists Spalling, Cracking, in Cold Weather

The coating can endure low temperatures with little danger of spalling or cracking. In a typical test, a steel ball weighing 1.67 pounds is dropped on a frozen sample of Asbestos-Bonded Pipe from a height of 7.5 feet. There was no spalling of the coating.

4



Protection Against Acids, Alkalies, Gases

Under severely corrosive conditions, Armco's bonded coating gives complete and lasting protection. Field test exposures to acids and alkalies have continued several years without damage to the coating.

Only Asbestos-Bonded Pipe can give you the proved advantages of the strength and flexibility of corrugated metal, the durability of ARMCO Ingot Iron, and a special bituminous pavement and coating.

You can obtain Asbestos-Bonded ARMCO Pipe on priority in diameters from 8 to 96 inches, with lengths up to 20 feet. Armco Railroad Sales Co. Incorporated, 2941 Curtis St., Middletown, Ohio

EXPORT: THE ARMCO INTERNATIONAL CORPORATION

ARMCO RAILROAD SALES CO. INCORPORATED

E-L MAKES POSSIBLE FLUORESCENT LIGHTING ON RAILROADS

NOW you can design new comfort and beauty into your post-war equipment with fluorescent lighting. Electronic Laboratories has made this possible by developing fluorescent lighting power systems for the modern lounge and dining cars, as well as for coaches.

These systems can be provided to operate fluorescent lights from either AC or DC of any available voltage. E-L Power Supplies for fluorescent lighting are extremely efficient, and may be provided with a high degree of voltage regulation—constant output voltage despite wide fluctuations of input voltage—which means that you have uniform light at all times.

Vibrator Power Supply units are also available to give you any necessary voltage for the operation of radio-telephone installations which will play such an important part in the safety program of the modern railroad.

Voltage Doubler System for Fluorescent Lighting

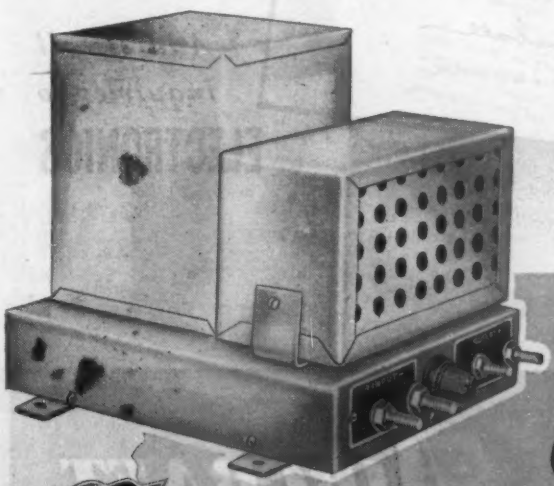
This E-L Power Supply System is especially suited for railroads or trackless trolleys where 32 volts DC is available as a power source. It consists of a voltage doubler type converter which steps up the 32 volts DC to 64 volts DC from which 14-watt fluorescent lamps may be operated. With this system the lamps can be individually controlled, the doubler can be operated without damage at no load, drawing practically no current under such conditions. The system is extremely efficient at full load.

Model S-946-A. A typical E-L Voltage Doubler Unit for operating twenty 14-watt fluorescent lamps.

Input: 32 volts DC
Output: 64 volts DC
Dimensions: 6 3/16" x 8 1/8" x 7 3/4"
Weight: 8 pounds

Other units may be supplied to operate electric razors or radio receivers for the convenience of your passengers.

Write E-L engineers today regarding your plans for tomorrow.



Electronic
LABORATORIES INC.
INDIANAPOLIS

VIBRATOR POWER SUPPLIES FOR LIGHTING, COMMUNICATIONS AND ELECTRIC MOTOR OPERATION · ELECTRIC, ELECTRONIC AND OTHER EQUIPMENT

. . . 2 Letters of to

AAC Products

AIRCRAFT ACCESSORIES CORPORATION

ELECTRONICS DIVISION

FAIRFAX AND FUNSTON ROADS • KANSAS CITY 15, KANSAS

September 19, 1944

To Superintendents of Telegraph
of American Railroads

Gentlemen:

You, as railroad communication and signal men, interested in providing your roads with adequate radio communication service for supplementing present safety and signal devices, are undoubtedly familiar with recent discussions and controversies concerning the choice between carrier induction systems and space radio for doing the overall job of railroad train communications.

We, at Aircraft Accessories Corporation, have made a practical engineering analysis of the situation and feel that the application of radio to railroads is a specialized problem, requiring compromises and an exact knowledge of the ability of each system (carrier or space radio) to fulfill the particular needs of each road. As we see it, the carrier current or induction system is useful when pole lines or specially placed wayside wires are within 200 feet of the track. It has the advantage of no frequency assignments, privacy of communication, and low cost. It should seriously be considered for at least wayside point to point service and wayside to train communication.

In cases where wayside wires of some type are not available or are not easily installed, and in congested yard installations, space radio is undoubtedly the answer to the problem.

Our basic business is the design and manufacture of all types of radio equipment. With many years of experience behind us, and particularly as a result of recent military equipment developments too secret to disclose at present, we are well equipped to handle all aspects of railroad communication problems. We call your attention to our carrier system now in daily operation on the Kansas City Southern Railway. We have had, as a result of this, much practical experience with induction systems. We know their limitations and advantages. We also know the capabilities of space radio as applied to train communication in instances where carrier systems are not directly applicable.

We invite your inquiries concerning such carrier equipment now designed and ready for production, and space radio apparatus on which development will soon be concluded.

Very truly yours,
AIRCRAFT ACCESSORIES CORPORATION

C. W. Kimball
Vice-President - Engineering

CWK:jk

★ *Address all inquiries to*

ELECTRONICS

AAC Products

AIRCRAFT
PRECISION RADIO
Kansas City, Kans.

Vital Interest to Communications Men!

● These letters speak for themselves. They tell a factual story concerning AAC developments in the railroad communications field — and how one type of AAC Railroad Communications System — using induction principles — has been tested and proved in actual service on one of the leading railroads in the Heart of America. Now in daily use over 560 miles of the Kansas City Southern between Kansas City, Mo. and Shreveport, La., this type of AAC system has thoroughly demonstrated its utility to the railroad.

With many years experience—and a war-tested background building more than 30 million dollars worth of radio equipment a year for the Government and the nation's airlines—AAC has the "know-how" to design and build a communications system to fully meet your specific requirements. The skilled staff of AAC engineers is at your service.

THE KANSAS CITY SOUTHERN RAILWAY COMPANY
LOUISIANA & ARKANSAS RAILWAY COMPANY

W. N. DERAMUS
PRESIDENT

KANSAS CITY, MO.

September 21, 1944

Mr. R. C. Walker, President
Aircraft Accessories Corporation
Fairfax and Funston Roads
Kansas City, Kansas

Dear Mr. Walker,

As a result of demonstrations over the past several months, we have decided to install your induction radio equipment on 560 miles of our lines between Kansas City and Shreveport, and on a number of locomotives and cabooses in use between these terminals.

Our decision to install induction radio sets as a supplement to our present systems of communication and train control is based upon evidence of savings in time and equipment through accelerated movement of trains, and in the belief that train communication will also provide an added factor of safety.

We have selected your equipment primarily because of the thorough manner in which your engineers have designed and adapted it for our use.

In view of the fact that the majority of the sets which we propose to acquire are already installed, I believe The Kansas City Southern is the first railroad to utilize train communication in the daily movement of trains over an extensive section of its main lines.

Yours very truly,

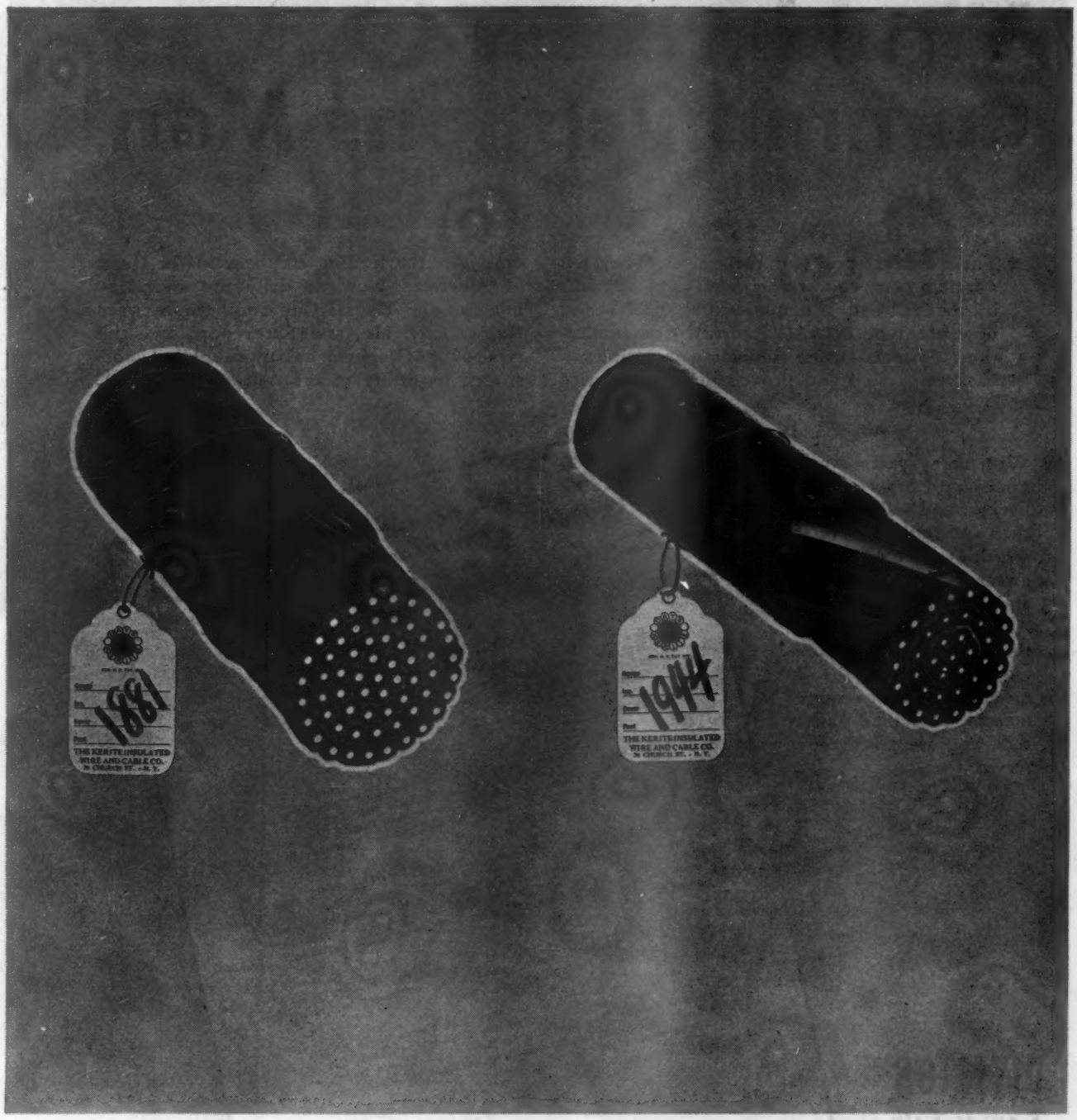
H. N. Deramus

DIVISION
Kansas City
Kansas

R-114

ACCESSORIES CORPORATION
and ELECTRONICS • ENGINEERED POWER CONTROLS
New York, N. Y. Burbank, Calif. Cable Address: AACPRO

Pioneers in Cable Engineering



The use of **PLAIN INSULATED CONDUCTORS** in multi-conductor signal and control cable presents many advantages in design and installation practice.

KERITE CABLES of this construction have a successful operating background of over **SIXTY YEARS** both underground and overhead.

THE KERITE INSULATED WIRE & CABLE COMPANY INC

NEW YORK CHICAGO SAN FRANCISCO

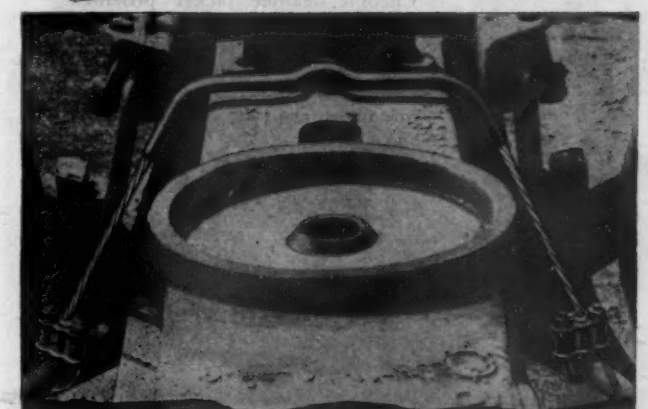
Latest A.A.R. Ruling

re: Brake Beam supports on all cars!

"TO ALL CAR OWNERS: Effective July 1, 1944, Paragraph (b-8) of Interchange Rule 3 is modified to read as follows:

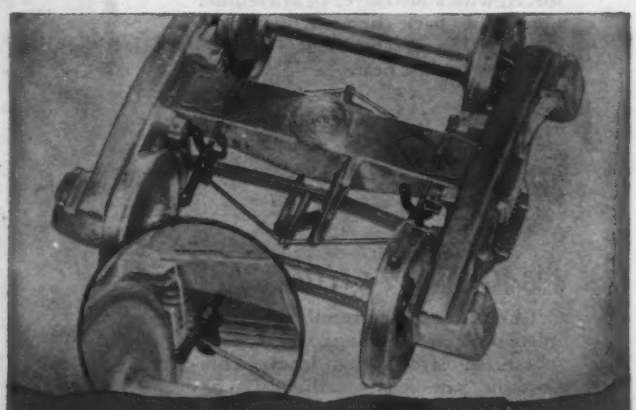
"'(b) (8) Bottom rod and brake beam safety supports, A.A.R. Recommended Practice, or A.A.R. approved equivalent, required on all cars built new or rebuilt on or after August 1, 1933. Effective January 1, 1945, the foregoing requirement will also apply to all cars. In interchange.'"

THESE SUPPORTS ARE A.A.R. APPROVED EQUIVALENT



Universal BRAKE BEAM SAFETY SUPPORT

● Economical—easy to apply—adjustable—light in weight. Attached only to the Brake Beams.



GRIPCO BRAKE BEAM SAFETY SUPPORT

● Holds brake beams in horizontal position. Spring action pulls shoes away from wheel contact when brakes are released, eliminating brake shoe drag.

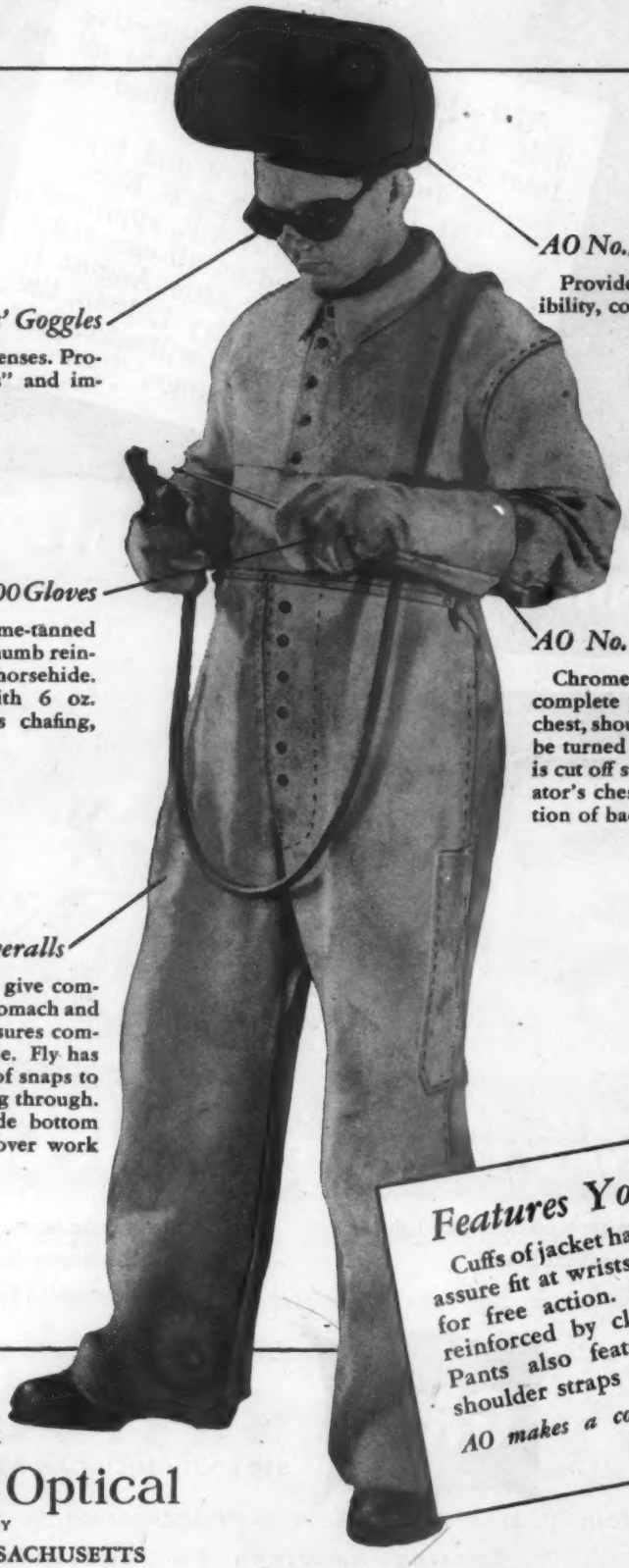
GRIP **NUT COMPANY**

310 SOUTH MICHIGAN AVENUE, CHICAGO 4, ILLINOIS

REGIONAL OFFICES: ST. PAUL—MINNEAPOLIS—ST. LOUIS—SAN FRANCISCO—CHICAGO—CLEVELAND—SALT LAKE CITY—SALISBURY, N. C.—PITTSBURGH—NEW YORK

Serving American Railroads Since 1906

What The WELL-DRESSED Welder Is Wearing



AO No. 3080 Welders' Goggles

Equipped with Calobar lenses. Protects against "flashed eyes" and impact from flying objects.

AO No. 320-4 Welding Helmet

Provides maximum protection, flexibility, comfort.

AO Welders' No. TX-100 Gloves

Gun cut of special chrome-tanned cowhide. Forefinger and thumb reinforced with added layer of horsehide. One-piece back lined with 6 oz. fleece lining that prevents chafing, insulates against heat.

AO No. 203-CL Short Jacket

Chrome leather jacket provides complete protection for arms, neck, chest, shoulders. Shirt style collar can be turned up to protect neck. Jacket is cut off straight across, covers operator's chest, armpits, and upper portion of back.

AO No. 207-CL Overalls

Chrome leather overalls give complete protection for legs, stomach and chest. Adjustment strap insures comfortable, safe fit at waistline. Fly has ample overlap and plenty of snaps to prevent sparks from rolling through. 11" wire pocket. 24" wide bottom makes pants easy to put over work shoes.

Features You Can't See

Cuffs of jacket have snap fasteners to assure fit at wrists. Pants are tailored for free action. Crotch is specially reinforced by closely spaced rivets. Pants also feature chrome leather shoulder straps for rapid adjustment.

AO makes a complete line of welders leathers.

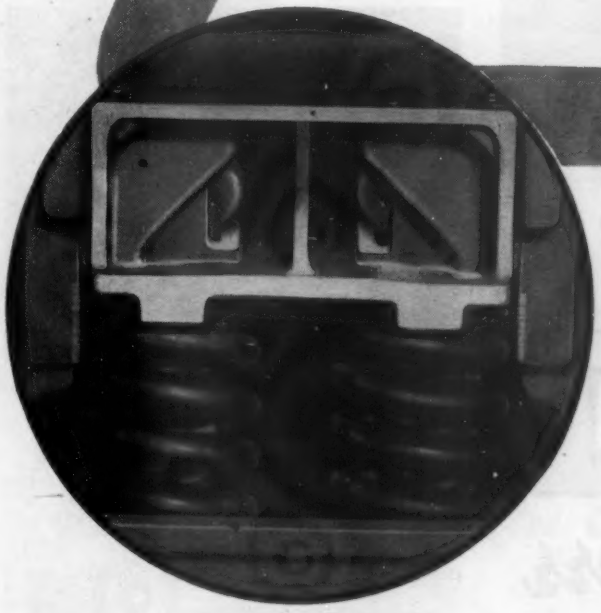
American Optical
COMPANY
SOUTHBRIDGE, MASSACHUSETTS

THE TRUCK FOR TODAY'S NEED . . . TOMORROW'S SPEED!

AS FREIGHT SPEEDS MOUNT

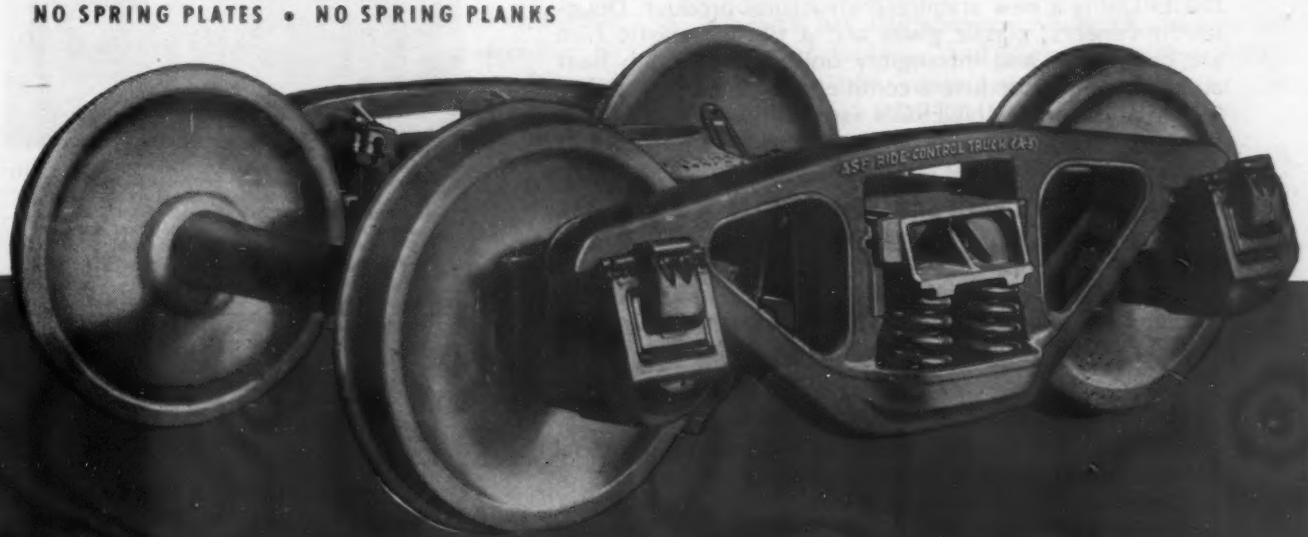
Ride-Control

Starts to Count!



When used with long-travel coil springs, the A.S.F. Ride-Control Truck (A-3) is a high-speed freight-car truck. And because it makes possible material increases in efficient train speeds, the cars under which this truck is used can carry more revenue tonnage in any given period. Increased speeds provide faster overall schedules, hence, service at lower unit cost . . . the measure of true operating economy.

NO SPRING PLATES • NO SPRING PLANKS



AMERICAN STEEL FOUNDRIES

CHICAGO

BUILT—NOT BOUGHT

In giant presses sheets of selected Douglas fir veneer, a bonding agent of heat-set plastic, and a surfacing film of a remarkable new fibrous plastic are permanently fused together. The result—INDERON.

Facts About

INDERON

for Postwar Planners

WHAT IS INDERON?

INDERON is a **new** stabilized structural product. Douglas fir veneers, plastic glues and a fibrous plastic film are chemically and infrangibly united under high heat and pressure to produce a complete, finished material in large panel form. INDERON is neither a plastic nor a plywood, but an alloy retaining the better qualities of both.

WHAT ARE THE PROPERTIES OF INDERON?

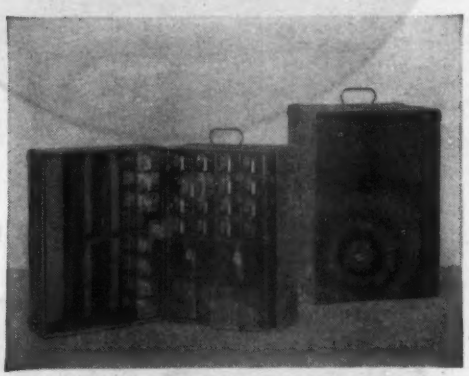
INDERON is waterproof, with a dense hard finish highly resistant to abrasion, impact, vapor permeation and water absorption. INDERON needs no surface protection, no decorative treatment, no structural support. INDERON is stable. It does not warp or twist. It combines BEAUTY . . . STRENGTH . . . DURABILITY.

IS INDERON CURRENTLY AVAILABLE?

INDERON, developed primarily as a packaging material for the Air Corps, was later adopted by all branches of the services for a wide range of specialized applications, particularly where resistance to tropical fungus, termites and weathering was important. While these vital war needs have taken practically all production, INDERON testing and research have continued—and after the war this unusual product will emerge as a new, distinctly **different** structural material.

The unusual physical properties of INDERON suggest many uses in coach and car construction. As a liner for the Chicago and Northwestern wet pulp car, shown above, all necessary requirements for this difficult type of service were met by INDERON. It is tough, hard, easy to install, low in cost.

INDERON is waterproof, effectively stops vapor transmission, creates an enduring surface, can be installed on both the interior and the exterior of freight cars. INDERON is considerably stronger than plywood, needs no paint or finish.



INDERON is successfully serving the Army Air Corps as the preferred material for packaging many vital parts, medical supplies and delicate instruments. INDERON has also been used for many other important war purposes, and has proven its ability to resist tropical fungus, termites, weathering and water immersion.

INDERON

THE *Stabilized* STRUCTURAL PRODUCT

Buffelen Lumber & Mfg. Co.
Tacoma 1, Washington
Washington Veneer Co.
Olympia, Washington
manufacturers

Chicago Sales Office:
9 So. Clinton St., Chicago 6

BETTER STEEL CASTINGS THROUGH RESEARCH

How Important a Grain of Sand can be!

To most of us sand is just sand. But to a steel founder, the size and shape of each single grain is important.

Nature never bothered to make all sand uniform—not even in the same sand bank. Grain sizes may be large or small, grains may be sharp or rounded, and there may be great variations in the quantity and kind of bonding materials—the elements that cause the sand to pack.

Modern steel foundry practice calls for molding sands and core sands of controlled and uniform quality, sand that will stand the intense heat of molten steel.

Research has taught us how to wash and dry and classify silica sands. And how to add to clean, uniform, selected sand just the right amount of the right kind of clay and organic matter needed to produce a good mold—a mold that will turn out a clean casting of accurate dimensions.

Research has also shown us how to measure the strength of molding and core sands, flowability, permeability, the effects of temperature and the proper moisture content.

Even during war production, these studies have gone on. The result has been better wartime steel castings—uniform in strength, finish and mechanical properties.

And when the Steel Castings Industry takes off its uniform and returns to civil life, the same research will assure you of better steel castings for the new world of the future.

Published by the Steel Founders' Society of America, to tell you about its organized Research Program.

MODERNIZE AND IMPROVE YOUR PRODUCT WITH

STEEL CASTINGS

G-E lamps can help postwar ticket offices meet the challenge of competition! Cheerful, generous light attracts customers, helps to speed service and reduce errors. Union Pacific Ticket Office, Denver, Col. ▶

Good lamps are the heart of any lighting installation.

DON'T FORGET . . . the creed of G-E Lamp Research is to make G-E lamps *Stay Brighter Longer*

G-E MAZDA LAMPS

In lamps marked G-E, you get all the benefits of over 50 years of General Electric Lamp Research.

GENERAL ELECTRIC

BUY WAR BONDS AND HOLD THEM

Hear the General Electric radio programs: "The G-E All-Girl Orchestra", Sunday 10 p. m. EWT, NBC; "The World Today" news, every weekday 6:45 p. m. EWT, CBS.

get all
ears of
search.

BONDS
THEM

T, CBS.

AGE

TIMKEN TORTURE TEST NO. 21454

Your assurance of reliable performance of Timken Axles and Brakes is found in the "Torture Tests" going on day after day in Timken's modern engineering laboratories.

Every new design, whether it be a complete axle or a new type of hardened pin, is Torture Tested under conditions far more severe than it will encounter in daily service. Production units and parts, even though they have proved satisfactory in years of service, are constantly "check-tested" too.

Typical of these Torture Tests is the spiral bevel gear and pinion set illustrated above. This is just one of hundreds of tests, in which several sets of gears, all of one model and ratio, are run to destruction under maximum torque input. Tests of similar gear sets are made under identical conditions at slow speed, where the greatest tooth load is imposed and lubrication is most difficult.

If performance is not up to Timken's high standards, changes are made in design or materials and the tests repeated.

Then, no matter how satisfactory the laboratory Torture Tests have been, they are confirmed by lengthy road tests under actual operating conditions —tests that may run from a hundred thousand up to several million miles.

From these and hundreds of other severe tests Timken engineers are constantly learning how to still further improve Timken Axles and Brakes. To these men, whose combined axle engineering experience totals hundreds of years, every Torture Test is a new challenge—an opportunity to make Timken products better.

38 YEARS OF AXLE ENGINEERING LEADERSHIP

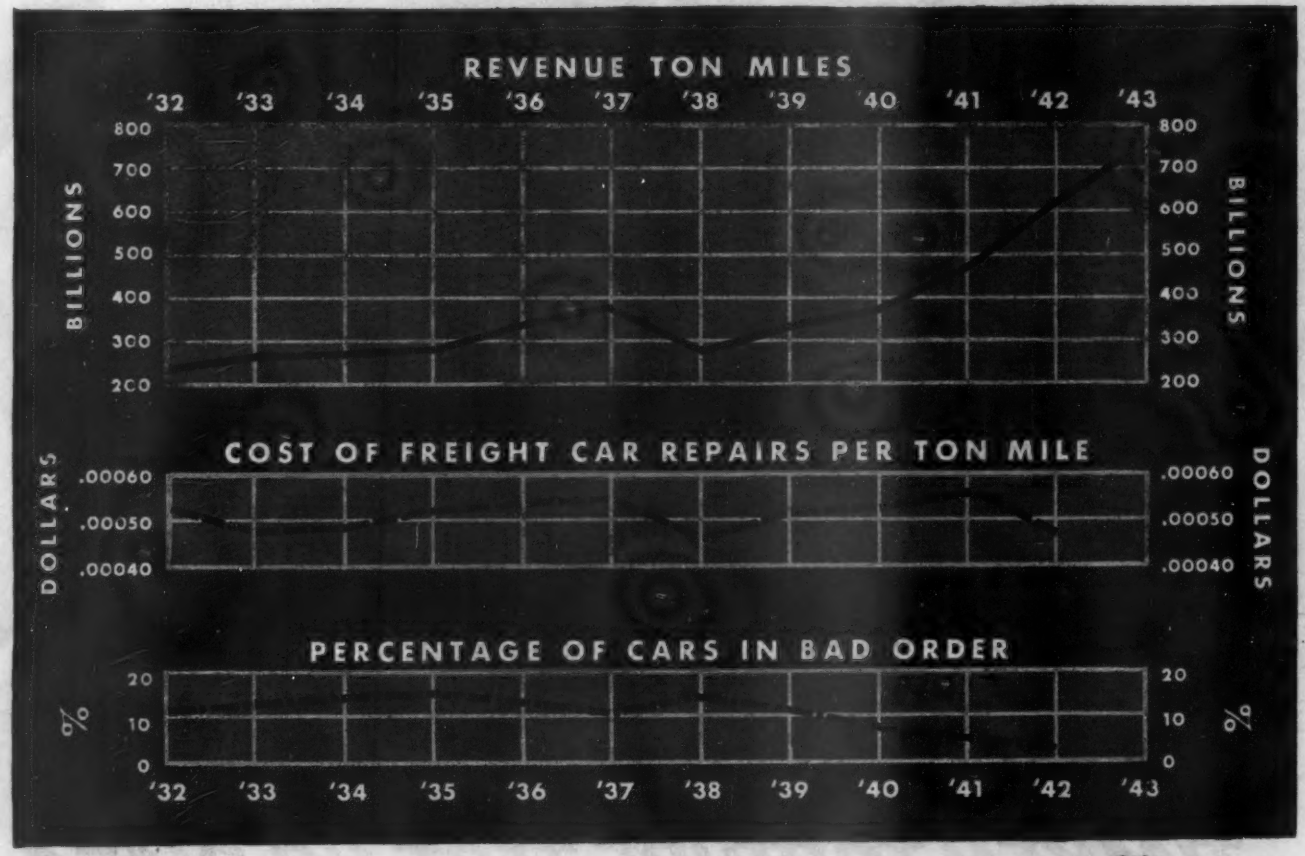
TIMKEN AXLES

THE TIMKEN-DETROIT AXLE CO., DETROIT 32, MICHIGAN
WISCONSIN AXLE DIVISION, OSHKOSH, WISCONSIN

ARMY (E) NAVY
For Production
"Well Done"

Outstanding Example of Preparedness

A.A.R. IMPROVEMENT PROGRAM



IT is because of the great progress in improving railway equipment and operation that the Railroads have been able to meet the greatest traffic demands of all time, in a way to arouse the respect and admiration of the nation.

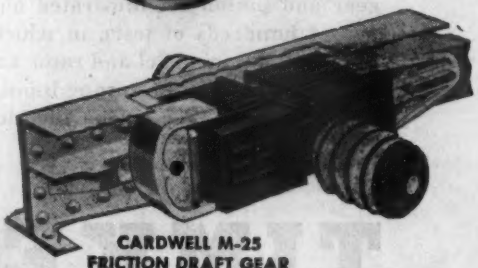
From the beginning, the car improvement program has promoted not only greater strength to **withstand shocks**—but greater capacity to **absorb shocks** before they reach the car structure.

Over 98% of the cars in freight carrying service are A.A.R. construction, and over 96% have Friction Draft Gears.

The shock-absorbing capacity of Cardwell and Westinghouse Draft Gears provides protection for both cars and lading, with an ample factor of safety, resulting in increased availability of equipment.

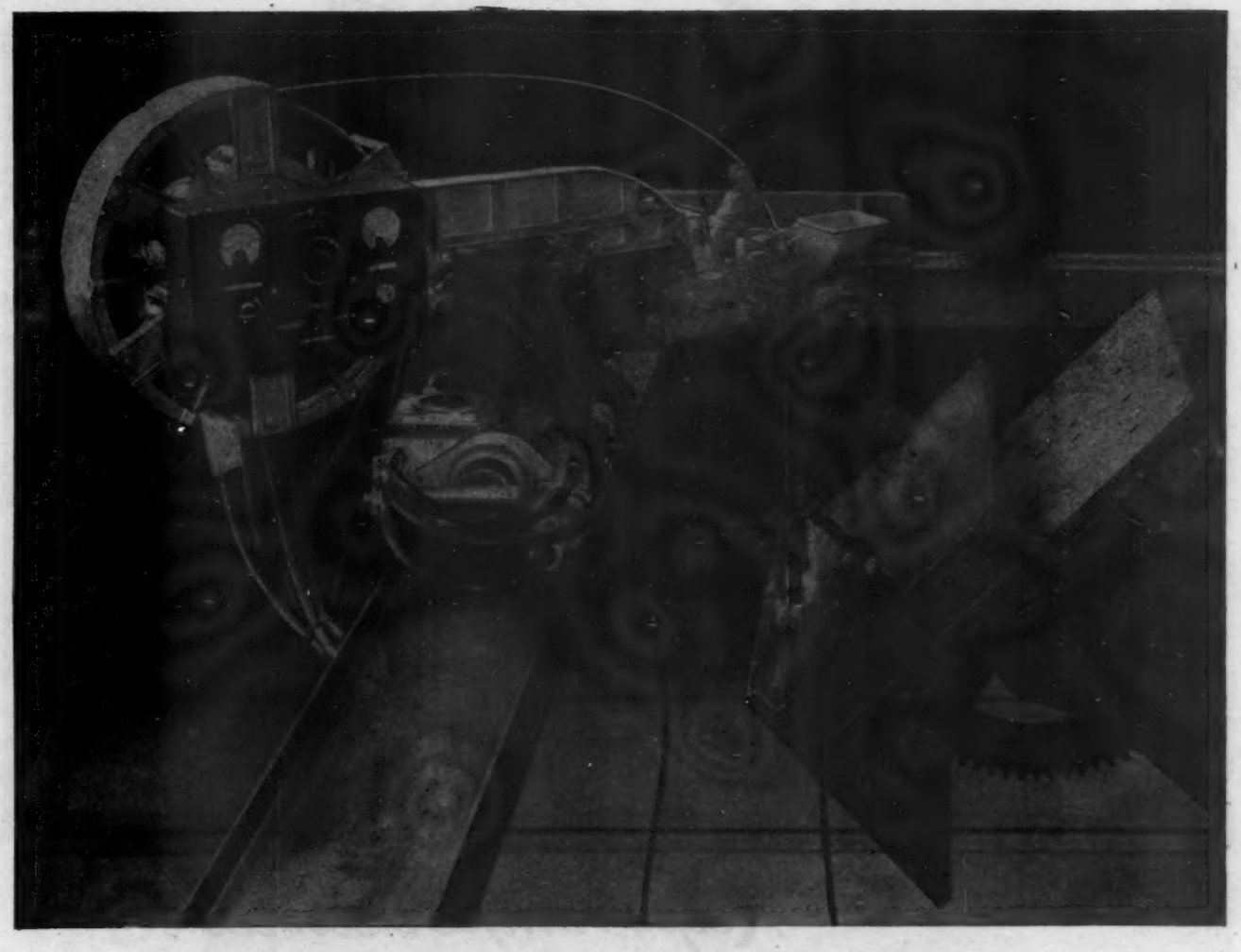
WESTINGHOUSE NY11-P
FRICTION DRAFT GEAR
Certified A.A.R.

CARDWELL FRICTION
BOLSTER SPRING
Type A



CARDWELL M-25
FRICTION DRAFT GEAR
Certified A.A.R.

CARDWELL WESTINGHOUSE CO., CHICAGO
CANADIAN CARDWELL CO., LTD., MONTREAL



UNIONMELT *Welding for a Variety of Shop Operations*

UNIONMELT electric welding automatically joins steel of any commercial thickness along straight lines, circles, spirals, circumferences, or irregular contours — 16-gage to 2½-in. metal in one pass. It has proved superior to similarly applicable welding methods — because it is as much as 20 times faster, produces high-quality welds at lower costs, and is less dependent on the skill of the individual welding operator.

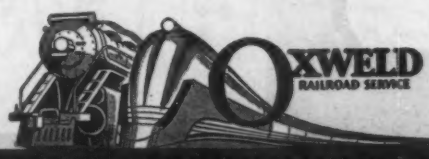
Railroad car and locomotive shops can use the UNIONMELT method for a variety of building and rebuilding operations. Installations can be designed to handle either one specific job or a variety of work. With a setup similar to that illustrated, for example, many different parts can be UNIONMELT welded. The welding head moves in two directions and at varying heights. The work can be positioned at any angle and revolved, if desired. Universal motion is thus made possible. Oxweld will help you plan an installation that will fill the specific needs of your shop. For further information please write to the Company at Chicago.

THE OXWELD RAILROAD SERVICE COMPANY

Unit of Union Carbide and Carbon Corporation

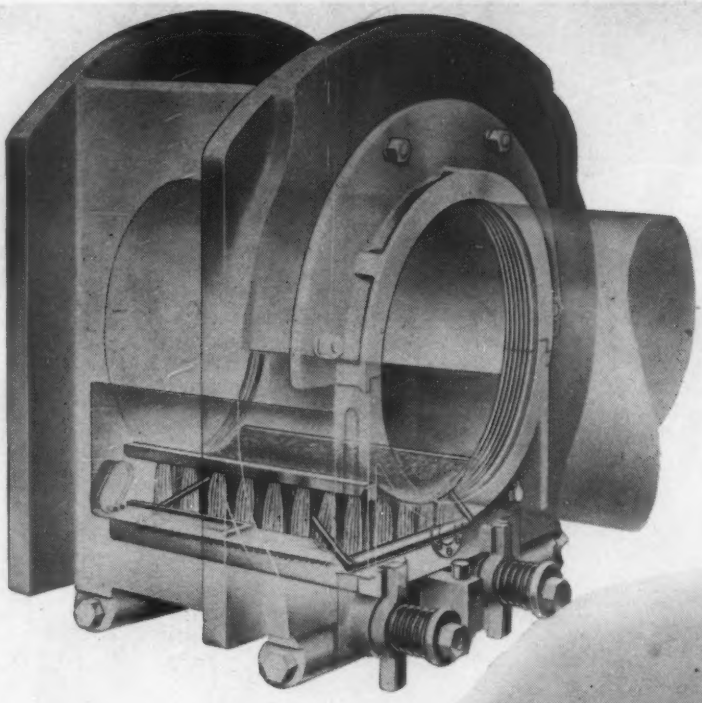
UCC

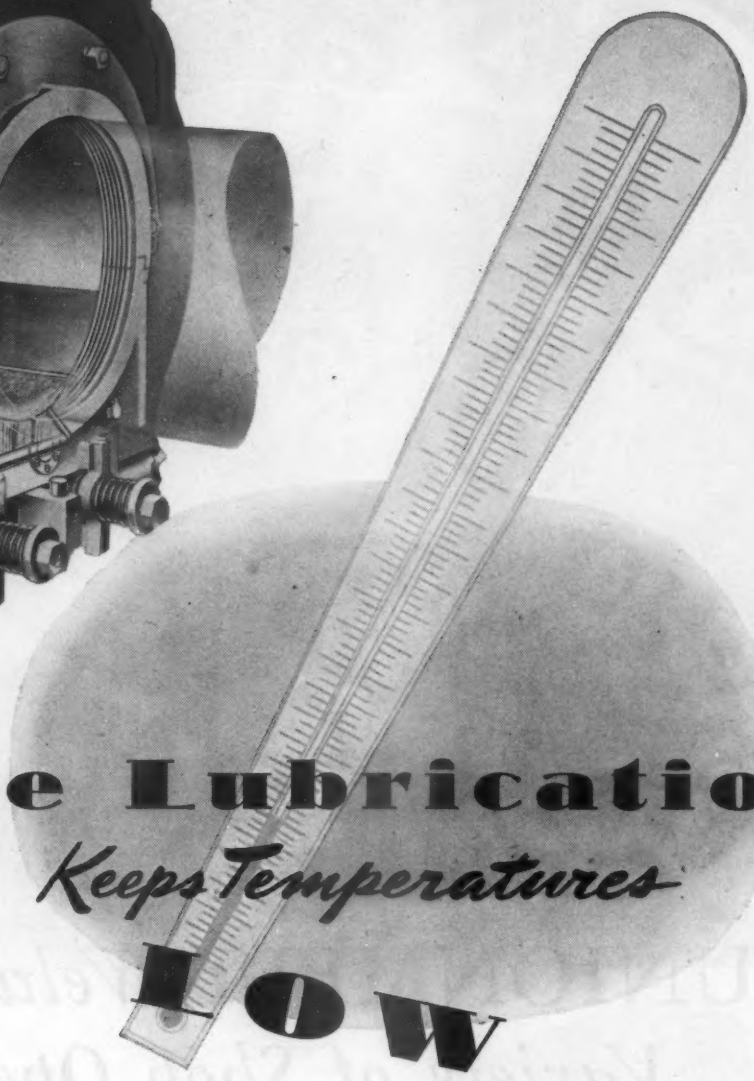
Carbide and Carbon Building Chicago and New York



SINCE 1912 THE COMPLETE OXY ACETYLENE SERVICE FOR AMERICAN RAILROADS

The word "Unionmelt" is a registered trade-mark of The Linde Air Products Company.

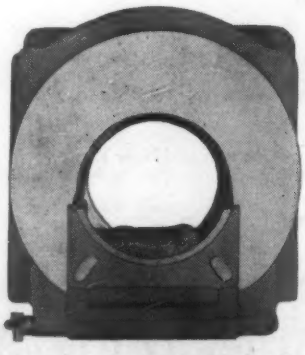




Positive Lubrication *Keeps Temperatures* LOW

Magnus Locomotive Journal Oil Lubricator Utilizes All the Advantages of Oil Lubrication

Positive lubrication is assured with Magnus Oil Lubricators. The compact lubricating pad is held against the journal and is fed by absorbent wicking which acts as a filter. Capillary action causes oil to climb the wicking, but dirt and abrasives are left in the bottom of the box. There is no loose packing to cause waste grabs or lint wipers.



Magnus Satco-Lined Lateral Hub Facing for engine-truck, trailer and driving boxes.

SATCO Bearing Metal

MODERN HEAVY DUTY BEARINGS

MAGNUS METAL CORPORATION
CHICAGO NEW YORK

PORUS-KROME*

Sails with Honor Ship

Official U.S. Navy Photograph

♥ *U. S. SUBMARINE SAILFISH*

The submarine Sailfish has been awarded the Presidential Unit citation, according to a recent announcement of the United States Navy. The award was made in recognition of the submarine's daring operations against strongly escorted Japanese task forces and convoys, during its tenth war patrol, when four "important hostile vessels" were destroyed and heavy damage was inflicted on another.

The Sailfish has had PORUS-KROME on the cylinders of its main propulsion Diesel engines for about four years . . . one of the first Navy vessels to use this new process. Since that time more than 76,000 similar liners have been processed for Navy Diesel Engines, which are used in submarines, destroyer escorts, mine sweepers, landing craft, etc.

The Navy requires rugged reliability in its engines . . . you need it, too, for lower operating costs. And that is just what PORUS-KROME will give you. Write for information . . . then specify PORUS-KROME.

VAN DER HORST

U. S. PATENTS 2,048,670 AND 2,314,604

PORUS ☆ KROME

Good for the Life of your Engines

* PORUS-KROME is pure, hard chromium which is applied to cylinder bores by the patented Van der Horst process. It has tiny pores and channels in its surface which serve as reservoirs for lubricating oil . . . feeding it back as needed. It reduces corrosion and wear and multiplies cylinder life 4 to 20 times.

VAN DER HORST CORPORATION OF AMERICA OLEAN • NEW YORK CLEVELAND 11 • OHIO

AN AFFILIATE OF DRESSER INDUSTRIES

A New Line of Forged Adjustable Rail Braces

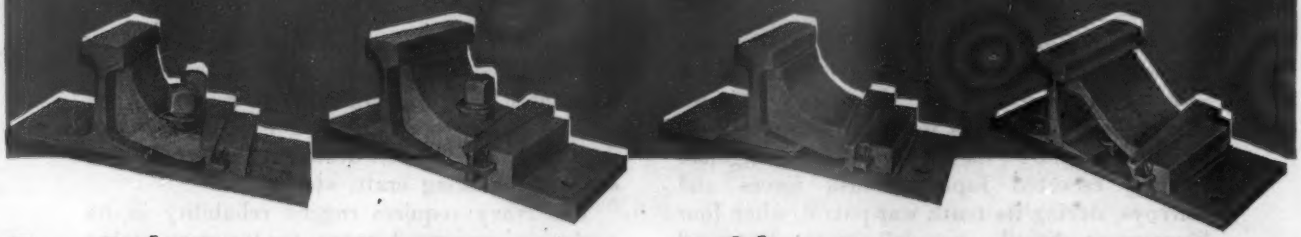
PRESENTED BY

PETTIBONE MULLIKEN CORPORATION

. . THE RESULT OF SUGGESTIONS FROM RAILROAD MAINTENANCE OF WAY AND SIGNAL DEPARTMENTS

Maximum Bracing—Minimum Maintenance—Longer Service Life

PETTIBONE MULLIKEN design (1) Reduces the need for full rigid clamping. (2) Supplies constant bracing to the rail whether bolts are tight or loose or whether no bolts are used. (3) Controlled flexibility—not attempting to stop the wave or up-and-down motion of the rail, yet restricting tipping or side-thrust—no wide gage—close signal adjustments. (4) Provides larger, better fitting wearing areas, of forged, copper bearing corrosion resistant steel, thus reducing the frequency of adjustment. (5) Makes infrequent adjustment easy.



Two Bolt Brace

Bolts will be initially tighter and will stay tight longer than on other bolted braces. Maintains gage and is an effective brace to the rail even if bolts work loose. Square-head acorn nuts spaced for 180° turn with ordinary track wrench. 11 pieces—easy to install, adjust or remove.

One Bolt Brace

Bolt will be initially tighter than on other braces. Single bolt acts as a pivot under rocking motion caused by change of wheel weight from receiving to leaving edges of plate—tends to remain tight longer. Maintains gage and is an effective brace to rail even if bolt works loose. Square head acorn nut permits 180° turn with ordinary track wrench. 8 pieces—easy to install, adjust or remove.

Boltless Brace

No bolts to corrode, wear or tighten. Controlled flexibility—up and down or wave motion of rail is not limited, yet restricts its tipping or side-thrust. Maintains gage, and permits accurate signal adjustments. Simplicity assures proper maintenance. Design permits single or double spiking on outside of stock rail if desired. 4 pieces—wedge, brace, key and plate.

Curve Brace

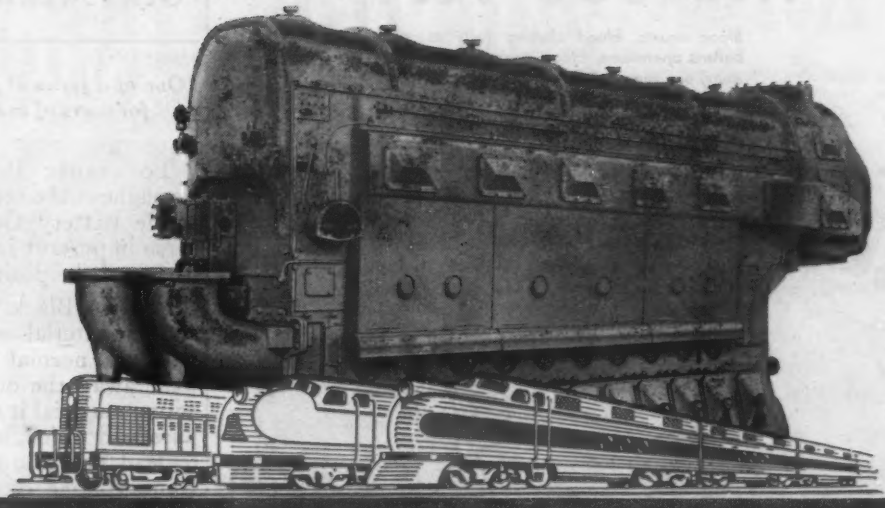
Boltless brace designed for use on curves in conjunction with gage rods—yet can be used at guard rails and switches. Supports head of rail against side-thrust or tipping forces. Easily installed, adjusted or removed. Maximum flexibility. Design permits single or double spiking on both sides of rail. Simplicity assures proper maintenance. Insulated brace member optional. 4 pieces—wedge, brace, key and plate.

Write for Bulletin No. 1101

Established 1880

PETTIBONE MULLIKEN CORPORATION

4710 West Division Street, Chicago 51, Illinois



Only 3 Diesels in These 6000-Hp. Locomotives!

YES, in a Fairbanks-Morse 6000-horsepower freight or passenger locomotive there are *only three* Diesel engines, *only three* main generators! This means easier, faster, more economical maintenance and servicing . . . permits greater locomotive assignments.

These great advantages rise from the Fairbanks-Morse opposed-piston Diesel, an engine which uses *two* pistons in each cylinder to develop extra power. More than two million horsepower of these Diesels are now in active service.

Fairbanks, Morse & Co., Fairbanks-Morse Building, Chicago 5, Illinois.

A name worth remembering!

FAIRBANKS-MORSE

...BLOOD TEST

Blood counts, blood clotting tests so vital before operations, blood typing for transfusions, are some of the medical miracles which have helped to prolong life.

As blood is the "fluid of life", the electrolyte solution is the life blood of a storage battery. The common test of its specific gravity indicates the state of charge and available capacity.

Periodical checking and testing of your Gould batteries will assure your attaining 100% of rated capacity throughout their life expectancy.

If you have not solved your battery requirements we invite you to use the facilities of our engineering department to assist you in getting the proper installation to fit your needs.

Write Dept. 510 for Gould Kathanode Glassklad Battery Bulletins: 700 for Diesel Locomotive service, 800 for Car Lighting and Air-Conditioning.

GOULD STORAGE BATTERY CORPORATION DEPEW, N. Y.

Factories: Atlanta • Chicago • Dallas • Depew • Leavenworth • Los Angeles • North Bergen • Rock Island St. Paul • Sioux City • Zanesville

—Buy War Bonds—

FOR EXCELLENCE IN STORAGE BATTERY PRODUCTION AT DEPEW PLANT

GOULD

Since 1898 THE BATTERY PICKED BY ENGINEERS

GLASSKLAD BATTERIES

One of a series of imformative articles for users of industrial batteries

To assure 100% of capacity throughout the rated life of the Kathanode battery Gould has perfected three important improvements in the design of the positive plate unit.

First is Black Oxide, the unique active material with the pure lead core. As normal cycling operations wear away the outer surface of this active material it exposes some of the pure lead which, in turn, is converted to lead peroxide to maintain a constant volume of active material in the plate.

Second is the Kathanode Grid with its principal members cast in a double-wedge shape that securely locks the active material in each box-like pocket. Extra strength and conductivity is provided by a round central member of smaller cross-section buried in the active material of each pocket, where it is safe from the attack of peroxidization.

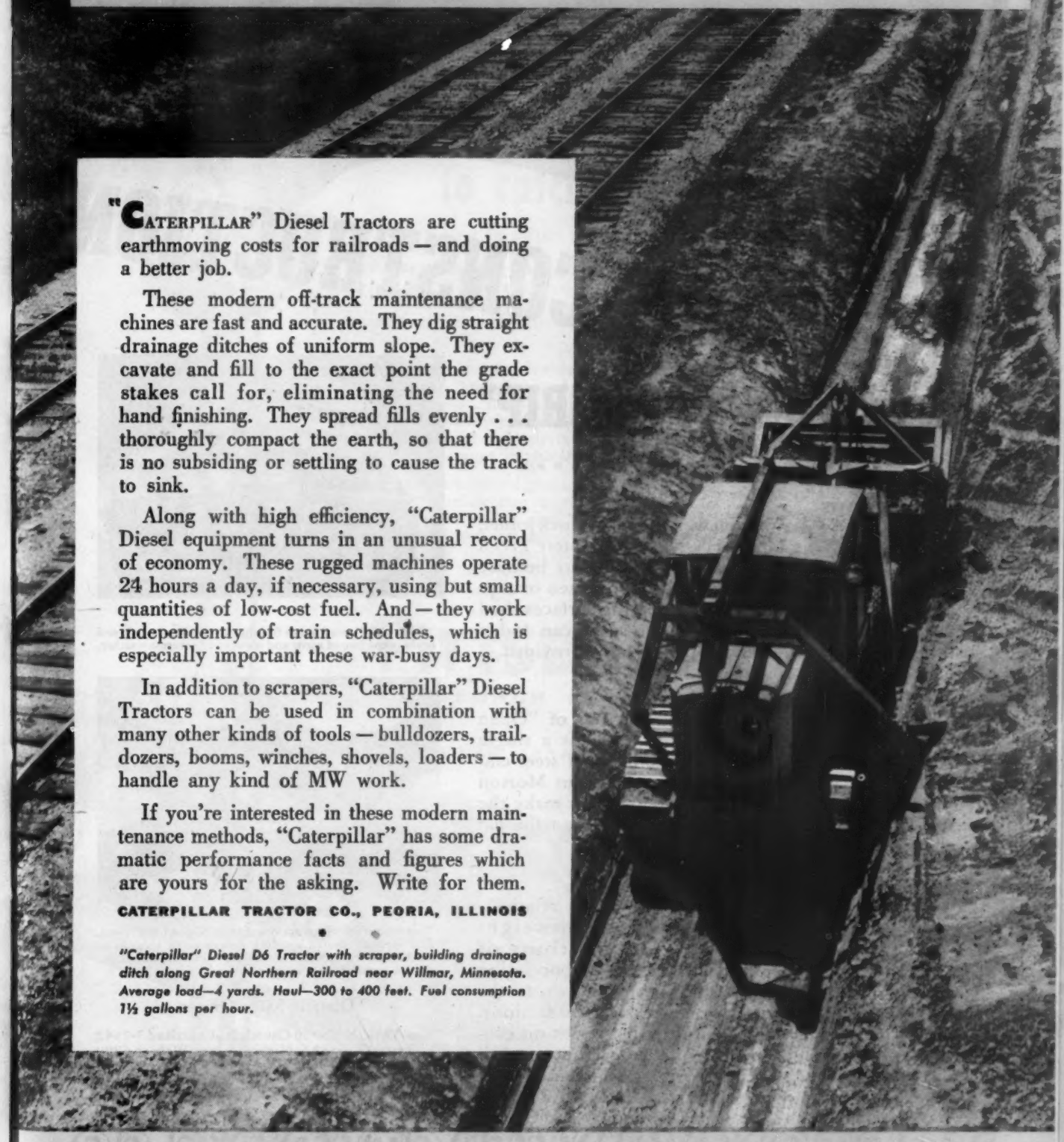
Third are the spun glass mats which Gould pioneered for American battery users. They are placed on both sides of the positive plate to prevent any active material, which might dislodge, from losing contact with the plate. In this sense they act as a retainer. However, when active material becomes inert and frees itself from the positive plate, it is much smaller in size. It can then filter through the porous mats to the sediment chamber.

Some interesting facts about the Gould spun glass mat are found upon examination of the product. Each filament of glass is drawn to a diameter of only .0008 of an inch. There are twelve layers of these threads, even though the porosity of the mat exceeds 90%, and uniformity is maintained by the use of a weight system to check each mat.

You will also note that these mats are made with long, continuous threads of glass fiber, instead of short pieces. This permits capillary action and promotes rapid diffusion of fresh electrolyte to the plate surface, an important factor in maintaining sustained voltage during discharge.

Thus, in Gould Kathanode construction, you get a special long life active material, a grid to match active material life, and spun glass mats that minimize shedding, while still permitting free circulation of the electrolyte, throughout the battery's many years of service life.

ACCURATE DITCHING *AND LOTS OF IT*



"CATERPILLAR" Diesel Tractors are cutting earthmoving costs for railroads — and doing a better job.

These modern off-track maintenance machines are fast and accurate. They dig straight drainage ditches of uniform slope. They excavate and fill to the exact point the grade stakes call for, eliminating the need for hand finishing. They spread fills evenly . . . thoroughly compact the earth, so that there is no subsiding or settling to cause the track to sink.

Along with high efficiency, "Caterpillar" Diesel equipment turns in an unusual record of economy. These rugged machines operate 24 hours a day, if necessary, using but small quantities of low-cost fuel. And — they work independently of train schedules, which is especially important these war-busy days.

In addition to scrapers, "Caterpillar" Diesel Tractors can be used in combination with many other kinds of tools — bulldozers, trail-dozers, booms, winches, shovels, loaders — to handle any kind of MW work.

If you're interested in these modern maintenance methods, "Caterpillar" has some dramatic performance facts and figures which are yours for the asking. Write for them.

CATERPILLAR TRACTOR CO., PEORIA, ILLINOIS

"Caterpillar" Diesel D6 Tractor with scraper, building drainage ditch along Great Northern Railroad near Willmar, Minnesota. Average load—4 yards. Haul—300 to 400 feet. Fuel consumption 1½ gallons per hour.

CATERPILLAR DIESEL

REG. U.S. PAT. OFF.

TRACTORS • ENGINES AND ELECTRIC SETS • EARTHMOVING MACHINERY

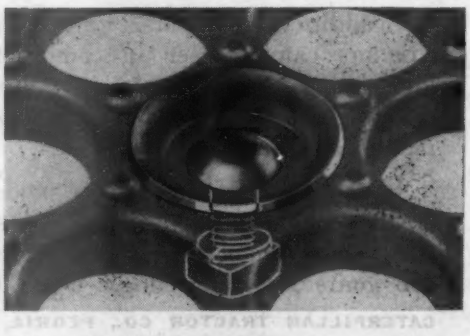
ONE-PIECE CONSTRUCTION

MAKES MORTON "OPEN GRIP" *SAFETY TREAD....*

SAFER Without welds, rivets or lock joints, Morton "Open Grip" Safety Tread provides maximum safety because vibration, strain and corrosion cannot loosen or separate any parts. The *curved* self-clearing surfaces shed water completely—neither ice nor snow can lodge on them. Ample clearance openings are provided.

"Open Grip" tread keeps freight car running boards and brake steps free of snow and ice even in severest weather.

STRONGER Each section of "Open Grip" tread is a single piece of sheet steel embodying circular open areas and the famous Morton Kass perforated button. The integral ribs make the tread rigid and of course far stronger than the flat sheet from which it is made.



This cup fits any clearance opening of "Open Grip" tread. Bolt through slotted opening fastens tread sections to saddles on car roof. This device eliminates need for precise location of holes in saddles.

EASIER TO USE The relatively lightweight sections of "Open Grip" tread are installed with labor-saving rapidity. The simple fastening device shown to the right allows speedy replacement of damaged sections.

You can get reasonably prompt deliveries on economically-priced "Open Grip" tread now—and it meets requirements set forth in A. A. R. letter circular No. D. V.-1054. Write for complete details and prices.

District Sales Offices

New York, N.Y.—30 Church St., Courtland 7-7542
Chicago, Ill.—332 S. Michigan Ave., Wabash 6789
St. Louis, Mo.—Paul Brown Bldg., Central 3348
Washington, D.C.—6945 Wisconsin Ave., Bethesda, Md., Wisconsin 7378

MORTON MANUFACTURING CO.

5105 WEST LAKE STREET • CHICAGO 44, ILLINOIS

When you get the go-ahead signal to catch up on maintenance

AMONG your important postwar projects, *reconditioning rolling stock* is undoubtedly near the head of the list. As soon as conditions make it possible to tackle this job, it can be accomplished in a minimum of time by specifying Pittsburgh Carhide.

The use of this finish rules out lengthy layups in the paint and maintenance shop because (1) Carhide is applied with remarkable ease and speed; (2) and it is famous for quick drying. This means material savings in the shop schedule.

This finish dries to a glass-smooth, extra-durable surface that stays *live*, tough and elastic—resists cracking and peeling caused by extremes of temperature—provides *live-paint protection*. For lower cost per-year-of-service, specify Pittsburgh Carhide.

PITTSBURGH RAILWAY FINISHES: In producing Pittsburgh Railway Finishes for a wide variety of uses, Pittsburgh technical men enjoy one great advantage—Pittsburgh has developed the *molecular-selection* process, by which ordinary oil is taken apart molecule by molecule. The result is a brand new oil, which vastly improves drying and enables us to control uniformity of paint performance of such railway finishes as Carhide, Stationhide and Ironhide.

Expert advisory service is offered to users of Pittsburgh Industrial Finishes. Our extensive experience in the field can often save you time and money.

PITTSBURGH PLATE GLASS COMPANY, Industrial Paint Div., Pittsburgh, Pa. Factories: Milwaukee, Wis.; Newark, N. J.; Houston, Texas; Los Angeles, Calif.; Portland, Ore. Ditzler Color Div., Detroit, Mich. The Thresher Varnish Co., Dayton, O.

PITTSBURGH PAINTS

PITTSBURGH PLATE GLASS COMPANY

RAILWAY FINISHES

PITTSBURGH STANDS FOR QUALITY PAINT AND GLASS

Oliver WATERTIGHT Bolts

ASSEMBLE FASTER

PREVENT BOARD SPLITTING

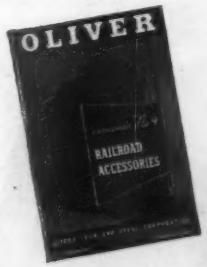
SELF-SEALING

- **For weather-sealed flush fastening in freight car construction.**
- **Eliminate costly counterboring.**
- **Head is heaviest where wear is greatest.**
- **Corrugated neck grips firmly without splitting boards.**
- **Raised rings on underside of head keep moisture out.**

SUCCESSFULLY USED TO SPEED CAR CONSTRUCTION AND REPAIR

Made in all popular sizes, Oliver Watertight Bolts are widely used by railroad car building and repair crews today.

The practical advantages of Oliver Watertight Bolts, listed above, are the result of experience and cooperation between railroad men and Oliver engineers.



Write for Oliver Railroad Catalog. Covers the complete line.

OLIVER
IRON AND STEEL
Corporation

SOUTH TENTH AND MURIEL STS. · PITTSBURGH 3, PENNA.

Makers of Bolts, Nuts, Rivets and other headed and threaded products

You've moved mountains

Acme Photo

We're glad Teletype has helped!

No praise can be too high for the way you railroad men of America have met the tremendous test of the past three years.

We, who know the operating problems you have faced, are glad that Teletype—by speeding typewritten freight bills, wheel and consist reports, diversions, reservations, switch lists, trace bureau reports and telegraph messages—has had a share in the magnificent job you have done!

Teletype Corporation, Chicago, Ill.

Buy all the War Bonds you can—and keep them!

TELETYPE

REG. U. S. PAT. OFF.

SUBSIDIARY OF

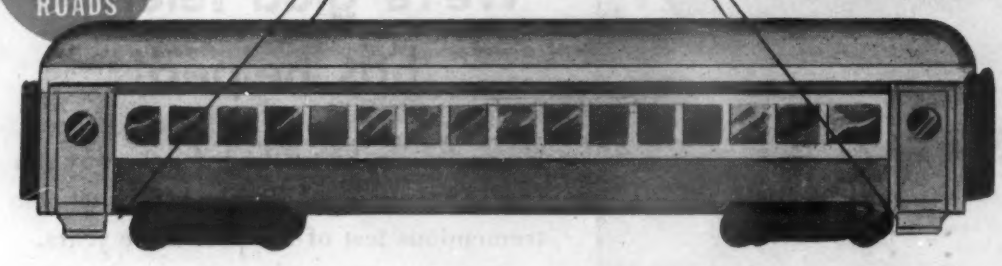
Western Electric Company

INCORPORATED

Lighter Stronger Better

There is no safer brake beam suspension than Schaefer loop brake beam hangers

STANDARD ON MOST ROADS

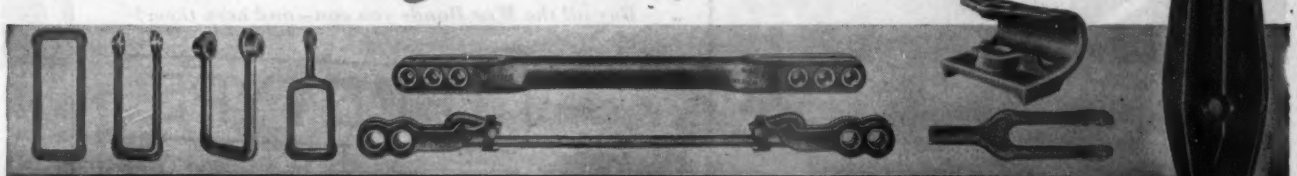


Schaefer Light Weight Design Insures More Than Car Life

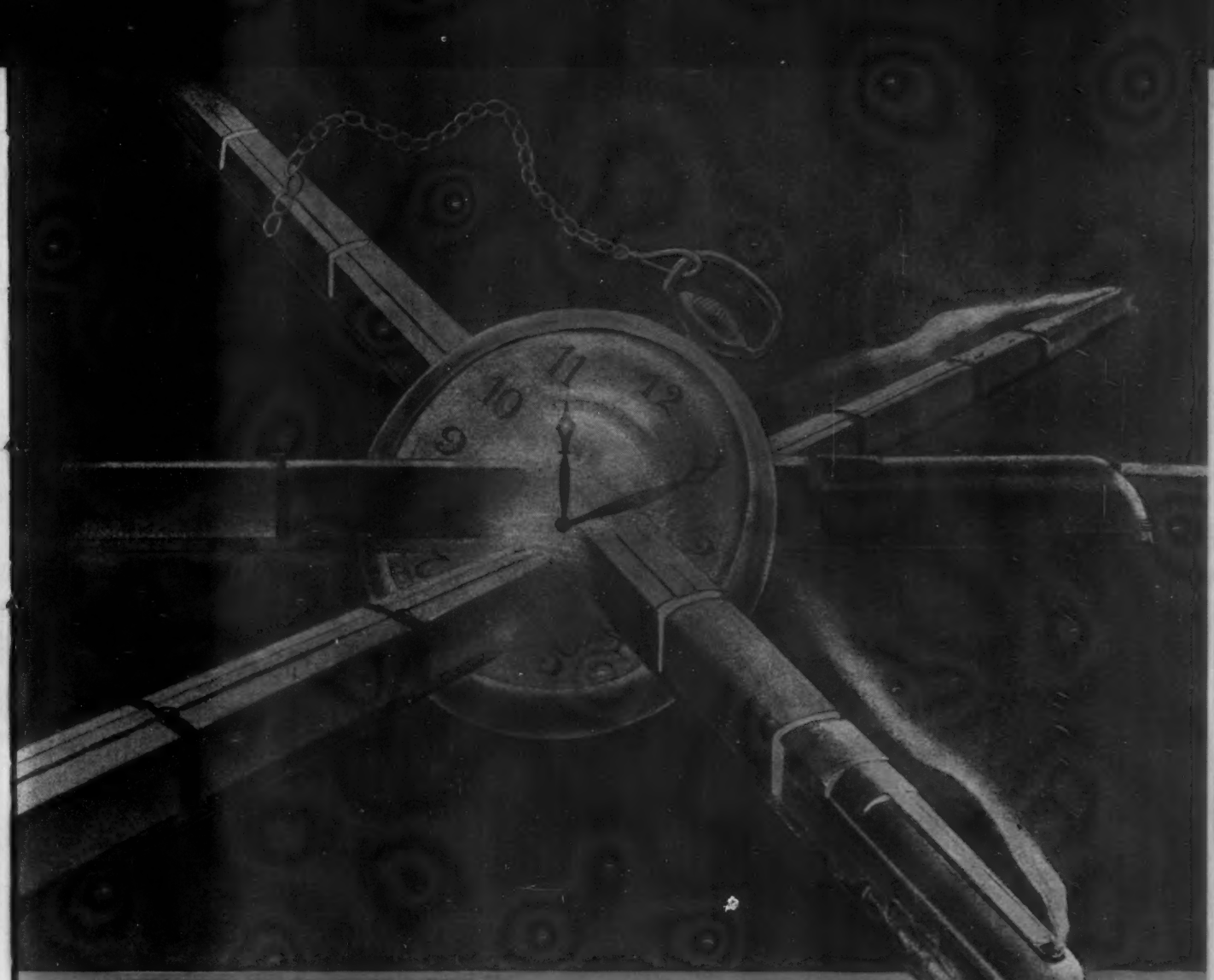
When your freight car repair program is under consideration you can be certain that Schaefer Service will meet your delivery requirements.

Schaefer EQUIPMENT COMPANY

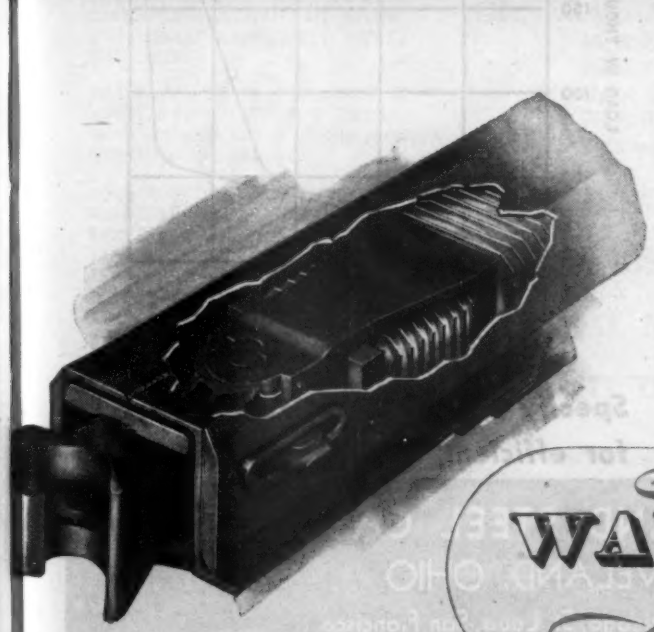
KOPPERS BUILDING • PITTSBURGH, PA.



LOOP, "U" AND STIRRUP TYPE BRAKE BEAM HANGERS... TRUCK, CYLINDER AND FLOATING LEVERS
TRUCK LEVER CONNECTIONS... BRAKE ROD JAWS... WEAR PLATES... BRAKE SHOE KEYS



NEW RECORD TIME



Not only vital safeguards for lading in transit and switching, but also for the protection of rolling stock, Waughmat Twin-Cushions are important safety factors for *high-speed freight.*

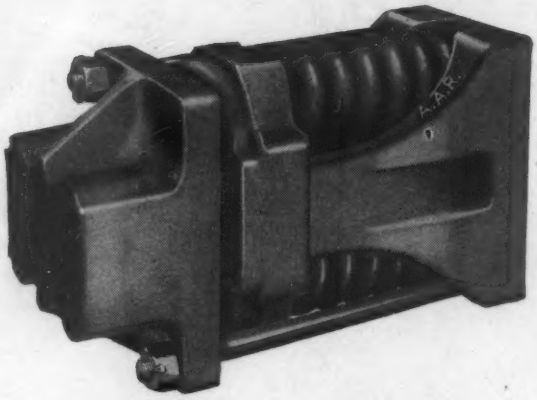
They reduce end shocks, component vertical and lateral shocks, and car-to-car roll, minimizing the tendency of heavily laden trains to rock and jump at high speeds.

Waughmat Twin-Cushions, the cushioning equipment of streamlined passenger trains, have been proven in hundreds of thousands of miles of freight service and are now being ordered in quantity for the freight cars of tomorrow. *Write for details.*

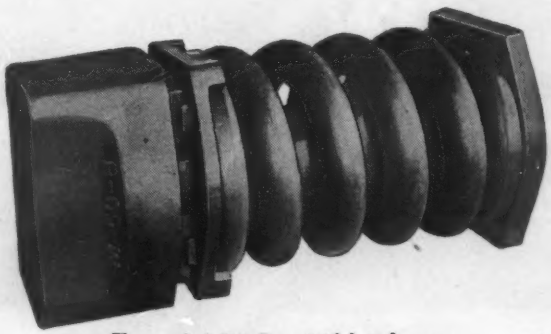
WAUGHMAT *Twin Cushions*

Waugh Equipment Company, New York, Chicago, St. Louis • *Canadian Waugh Equipment Company, Montreal*

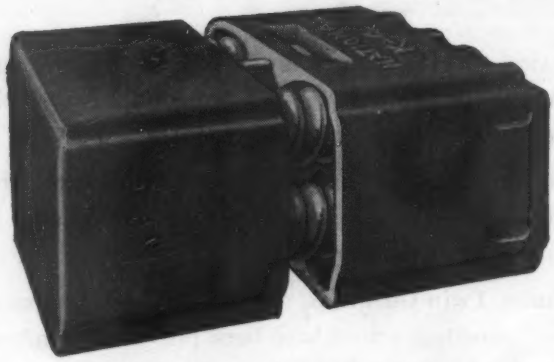
Car & Lading Protection



Type M-17-A—22⅜" long
A.A.R. Approved



Type M-50-B—20⅛" long
A.A.R. Approved



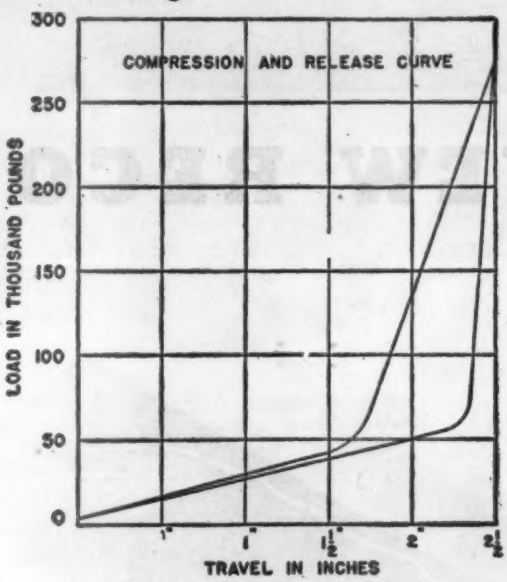
NATIONAL K-4 DRAFT GEAR
Designed especially to meet the requirements of high speed passenger service.

Heavier loads, longer trains and higher speeds make new demands on every item of freight car equipment.

Draft gears especially must be able to stand terrific punishment if they are to provide proper protection to the car and its contents.

NATIONAL FRICTION DRAFT GEARS

made of Naco Steel are designed to meet these extreme conditions. Their smooth action and high ultimate capacity affords the greatest protection to the car and lading.



Closure chart for Type K-4 Gears

Specify NATIONAL Draft Gears for efficient, economical service.

NATIONAL MALLEABLE AND STEEL CASTINGS CO.
General Offices: CLEVELAND, OHIO
Sales Offices: New York, Philadelphia, Chicago, St. Louis, San Francisco.
Works: Cleveland, Chicago, Indianapolis, Sharon, Pa., Melrose Park, Ill.

Railway Age

With which are incorporated the Railway Review, the Railroad Gazette and the Railway Age-Gazette. Name registered in U. S. Patent Office.

Vol. 117 — October 14, 1944 — No. 16

PUBLISHED EACH SATURDAY BY THE SIMMONS-BOARDMAN PUBLISHING CORPORATION, 1309 NOBLE STREET, PHILADELPHIA 23, PA., WITH EDITORIAL AND EXECUTIVE OFFICES AT 30 CHURCH STREET, NEW YORK 7, N. Y. AND 105 W. ADAMS STREET, CHICAGO 3, ILL.

WASHINGTON 4, D. C.: 1081 NATIONAL PRESS BUILDING, CLEVELAND 13: TERMINAL TOWER SEATTLE 1: 1033 HENRY BUILDING, SAN FRANCISCO 4: 300 MONTGOMERY STREET, ROOMS 805-806. LOS ANGELES 14: 530 WEST 6th STREET.

SAMUEL O. DUNN, CHAIRMAN. HENRY LEE, PRESIDENT, ROY V. WRIGHT, VICE-PRESIDENT AND SECRETARY. F. H. THOMPSON, F. C. KOCH, R. E. THAYER, H. A. MORRISON, J. G. LYNE, H. E. McCANDLESS, VICE-PRESIDENTS. J. T. DeMOTT, TREASURER.

SAMUEL O. DUNN, EDITOR. ROY V. WRIGHT, MANAGING EDITOR. JAMES G. LYNE, ASS'T. TO EDITOR. CHARLES LAYNG, WESTERN EDITOR. C. B. PECK. ALFRED G. OEHLER. E. L. WOODWARD. J. H. DUNN. R. A. DOSTER. H. C. WILCOX. NEAL D. HOWARD. GEORGE E. BOYD. WALTER J. TAFT. M. H. DICK. JOHN S. VREELAND. C. MILES BURPEE. ARTHUR J. McGINNIS. J. L. STOVER. C. B. TAVENNER. H. E. MEASON. LIBRARIAN: EDITH C. STONE. EDITORIAL ASSISTANT: BETTY KETCHUM.

RAILWAY AGE IS A MEMBER OF ASSOCIATED BUSINESS PAPERS (A. B. P.) AND AUDIT BUREAU OF CIRCULATION (A. B. C.).

SUBSCRIPTIONS, INCLUDING 52 REGULAR WEEKLY ISSUES, AND SPECIAL DAILY EDITIONS PUBLISHED FROM TIME TO TIME IN NEW YORK OR IN PLACES OTHER THAN NEW YORK, PAYABLE IN ADVANCE AND POSTAGE FREE. UNITED STATES, U. S. POSSESSIONS AND CANADA: 1 YEAR $6.00; 2 YEARS, $10.00; FOREIGN COUNTRIES, NOT INCLUDING DAILY EDITIONS: 1 YEAR, $8.00; 2 YEARS, $14.00. SINGLE COPIES, 25 CENTS EACH. H. E. McCANDLESS, CIRCULATION MANAGER, 30 CHURCH STREET, NEW YORK 7.

In This Issue

Page

Santa Fe Improves Coast Lines ***580***

A comprehensive description of the vast construction program imposed on this road by a 160 per cent increase in traffic, due to wartime influences, as well as a reversal in direction of loaded movement. This is the first of two parts.

Signal Section Holds Session ***584***

Reports of the committee on economics of signaling and the committee on signaling practice, which include information of interest to railroad officers in general, are presented herein.

What Rolling Stock Will Be Like ***586***

Management must direct its talents into merchandising channels if railroads are to retain and improve their share of the transportation business, believes E. D. Campbell, vice-president, A.C.F. He suggests that builders' designs for passenger cars are already established, but relatively drastic changes in freight cars can be expected, such as a shift from riveted to welded construction.

EDITORIALS

Post-War Railway Buying and Employment 575
Light Colors for Passenger Car Roofs 576
Equipment for Handling Ties 576
After Germany Quits 577
Railway Safety in Britain 578
Beware of Complacency 578

GENERAL ARTICLES

M. R. S. in France and England 579
Santa Fe Improves Coast Lines (Part I) 580
Signal Section Holds Session 584
What Rolling Stock Will Be Like, by E. D. Campbell 586
Railroading Much Safer Now Than in World War I 589

NEW BOOK **590**

RAILROADS-IN-WAR NEWS **591**

GENERAL NEWS **595**

FREIGHT OPERATING STATISTICS **609**

The Railway Age is indexed by the Industrial Arts Index and also by the Engineering Index Service

PRINTED IN U. S. A.

"UNION" ELECTRO-PNEUMATIC CAR RETARDER SYSTEM

. . . permits a continuous flow of traffic!

THE capacity of a railroad system is frequently determined by the efficiency of its yard operations. The value of a good job of main-line railroading may be nullified by delays in classification.

Hump yards equipped with "Union" Electro-Pneumatic Car Retarders and power-operated switches provide a classification facility which makes possible a continuous flow of traffic.

With this modern method of operation, maximum hump capacity is available at all hours, traffic flows smoothly and continuously from receiving yards into classification yards, and new trains are made up promptly for departure. For details, see Bulletin 155.

UNION SWITCH & SIGNAL COMPANY

SWISSVALE, PA.

NEW YORK CHICAGO ST. LOUIS SAN FRANCISCO

The Week at a Glance

"DISCRIMINATION" DEFLATED: The Southern's President Norris told a group of southern business men this week that the time is overdue to take the "technical squabble" over certain southern freight rates out of politics and out of the columns of the newspapers so it can be settled equitably by people who understand the freight rate structure and appreciate the consequences of disturbing it. And, as reported in the news pages, he demonstrated how poorly founded the politically-inspired wails about the effect of alleged discrimination on the development of southern industry really are. In 1939, the value of the nation's industrial production was 9 per cent *less* than it was twenty years earlier, but the value of the South's output of manufactured goods was 20 per cent *more*. The nation's industries were employing 13 per cent *fewer* people, but the South's had 19 per cent *more* on their payrolls.

●

SIGNAL SECTION REPORTS: Reports of two committees of the A. A. R. Signal Section (which were submitted at the recent committee meeting held in Chicaga in lieu of a convention) are abstracted in this issue. One sets forth train performance data bearing on the economics of signaling as developed on sections of track where automatic block signaling was converted to C. T. C., and also discusses a formula for forecasting the value of signaling installations in improving the availability of equipment. The other report reviews some of the uses of train communication apparatus, and analyzes applications of flashing signals in railway operations.

●

READYING THE SANTA FE: What the Santa Fe has been doing recently to improve the capacity and operating conditions of its Coast Lines is the subject of an illustrated feature article which is to appear in two installments, the first beginning on page 580. As was true of other roads serving the Pacific coast, the Santa Fe's prewar revenue traffic was preponderantly eastbound, while its wartime traffic is predominantly westbound. With this reversal in direction of loaded movement piled on top of a very substantial general increase in business, it was necessary to run more trains and longer trains than some stretches of the railroad were built to accommodate, and improvements of diverse character were called for. This week the account deals particularly with the improvements effected between Belen, N. M., and Los Angeles.

●

NEW CARS FOR NEW NEEDS: Taking as his theme the idea that railroad management will have to do a bang-up job of merchandising after the war—one to match the operating job that's been done during the war—A. C. F.'s E. D. Campbell told an assemblage of railroad men in Atlanta recently something about the contributions the car builders can chip in with to help make this assignment as productive as the opportunity is challenging. An abstract of his remarks appears in this issue, on page 586. To retain as much business as possible when the emergency lets up and competition gets keener, the railroads, he says, will need a comprehensive plan for selling the superior sort of transportation they have to offer; and to make the performance match the promise they will need, and the manufacturers will have to provide, equipment in which new structural materials, improved design, and refined components will all play important parts. The opportunities in this respect, as well as the necessity, from the standpoint of revenues, definitely are greatest in the field of freight car design, in his opinion.

●

TRAVELERS' RISK: Last winter the O. D. T. took pity on so-called stranded Florida vacationers who couldn't get the space they wanted on northbound trains at the end of the season, and authorized additional daily coach trains from that state to New York for the month of March. This season winter visitors to southern resorts will get no such consideration from the O. D. T., Director Johnson says, and they'll have to take their chances on getting home on the regular trains.

●

SHARING SAFETY HONORS: The British railways do a lot of things that American railways—operating where wage rates are higher and traffic is much less concentrated—have been unable to do, as an editorial points out. For example, the British have been able to do away with more main line grade crossings, they have been able to keep trespassers off their properties to a greater degree, and they have been able to set up absolute manual or controlled manual blocking very extensively. The result is a remarkable safety record, and one that showed an improvement in 1943, as compared to 1942, in spite of an increase in traffic (and therefore in hazards). Lacking an equal development of some of these physical safety provisions, American railroads have kept pace where managerial performance could be effective, nevertheless, and they also reported a better fatality record in the latter year of increased traffic.

●

PARING THE PROFITS: Disclaiming any intention to assume a prophetic role, the I. C. C.'s Bureau of Transport Economics and Statistics has released its latest calculations (based on the actual figures as far as they are available, as measured against established trends) of probable results for the current year in the way of Class I railway operating income, net, gross and expenses. The data, selected from the bureau's latest "Monthly Comment," are set forth in a news story in this issue. These statisticians incline to the view the year's net income may be around $700 million, as compared to $873 million in 1943 and the railroads' stated expectation that it will drop to $560 million. The bureau suggests that the year's net railway operating income may be $1,060 million, but it thinks this estimate may be low, on the theory that last year's expenses were "overstated."

HOW MUCH R. R. BUYING?: If the railroads should buy as much durable goods each year after the war ends, in proportion to the total national income, as they bought, on the average, in each of the years 1923-1930, and if the post-war annual national income is around $140 billion, as many authorities say it must be to sustain full employment—then the railroads would spend $3,000 million a year for equipment and materials. The leading editorial this week discusses two questions that are brought up by that postulation. First, *Should* the railroads spend that much? The editorial shows that, if the ratio between the increase in national income and the increase in equipment and materials purchases that occurred in 1941, as compared to 1936, should prevail in a post-war year when the national income is $140 billion, then the railroads would need to spend in such a year, for materials and equipment, about $2,300 million.

●

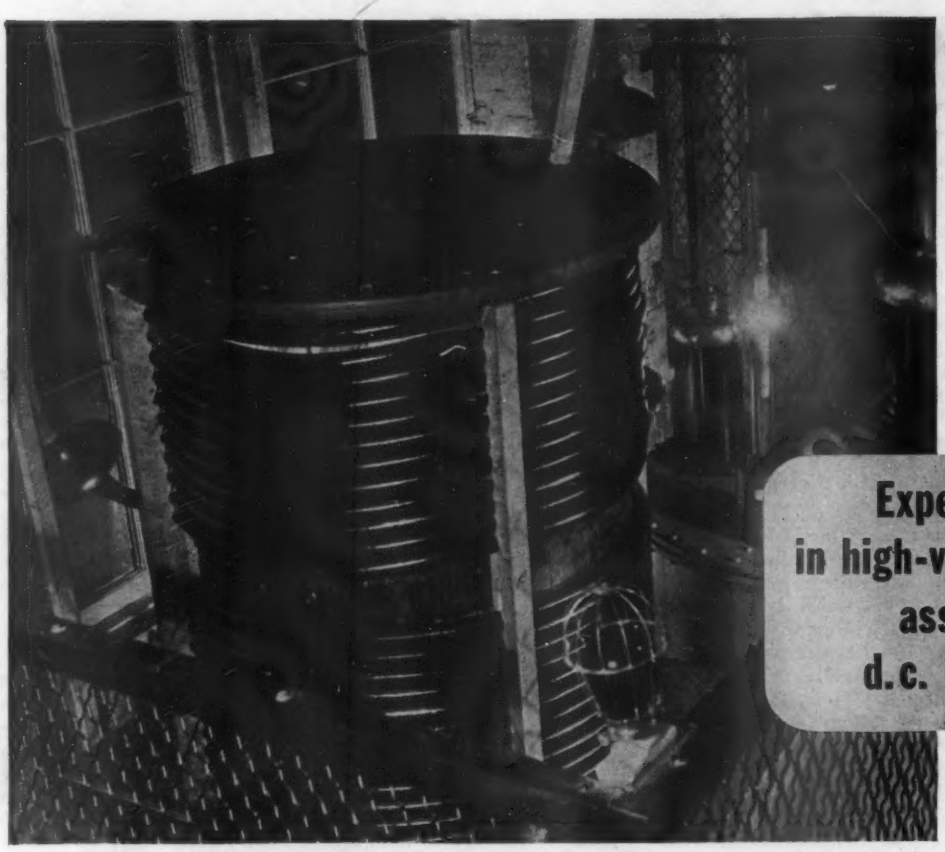
N. O. I. GOVERNS BUYING: Then comes the second question, *Can* the railroads spend that much? If they do, and thus contribute their share to the support of a prosperous economy and a high level of employment, then they will require an annual net operating income of about $1,500 million. Experience shows that the amount of buying the railroads do is regulated by the amount of their net operating income. It happens that the freight traffic the roads will handle in 1944 is about what they probably would have to handle in a $140 billion income year, but their net operating income this year will be, not $1,500 million, but about $1,160 million. Will they be permitted to earn enough in the future to provide their proper share of the buying upon which adequate general employment will depend?

●

LIGHT OR DARK ROOFS: An editorial this week discusses the advantages, from the point of view of lightening the load on passenger car air-conditioning systems, of using aluminum paint or other light colors to finish car roofs, and points out that substantial savings in refrigeration requirements have been effected with light colors, provided these roofs are kept clean. Since such a saving in refrigeration can be translated into a decreased drain on power, the application of light colors in the post-war period, it is suggested, is a subject worth following up.

●

RUNNING TRUE TO FORM: Claiming the credit for instituting the I. C. C. proceedings that resulted in suspension, May 15, 1943, of the freight rate increases authorized the year before in Ex Parte 148, the result of which was a reduction in railway receipts from freight moved amounting, it estimates, to about $350 million a year, the O. P. A. has announced its intention to oppose the railroads' application, now before the commission, for a restoration of the increases, and has hired to present its case on behalf of the "hold-the-line" order the same lawyer it employed last year.



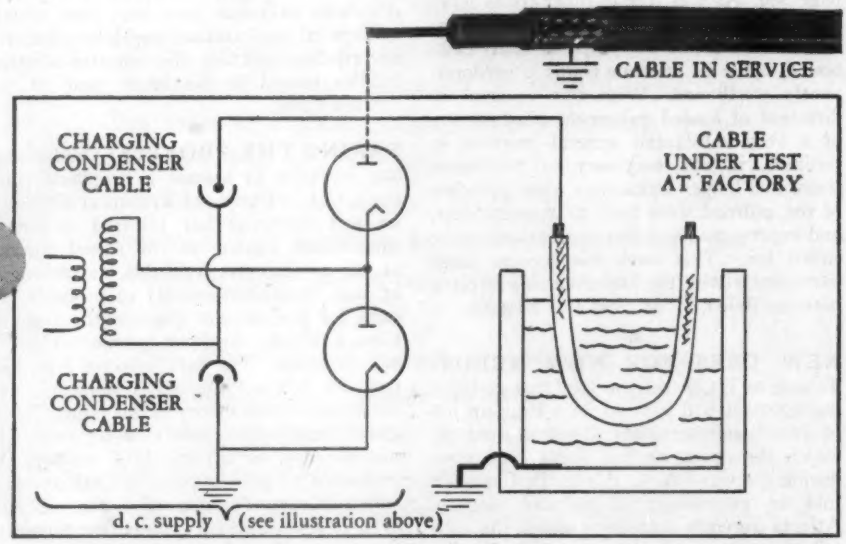
Okonite high voltage cables must pass super-voltage tests made with this d. c. kenotron set.

Experience gained in high-voltage d.c. testing assures reliable d.c. Cable Operation

For over 5 years all Okonite high voltage wires and cables have had to pass our self-imposed factory d. c. tests at voltages of 4 to 5 times those required in standard a. c. high voltage tests. This procedure was adopted in order to eliminate possible defects that a.c. testing could not always locate.

Though not required by purchasers, this extra precaution has led not only to the production of better cables but has also resulted in obtaining cables that are more reliable for the high voltage d. c. applications brought about by new electronic developments.

Our extensive experience with d. c. testing and d. c. applications, together with our single strip method of insulating and vulcanizing in a continuous metal mold, added to our unceasing research on all new dielectrics have been useful contributions to the manufacture of railroad cables. The Okonite Company, Passaic, New Jersey.


CABLE IN SERVICE
CHARGING CONDENSER CABLE
CABLE UNDER TEST AT FACTORY
CHARGING CONDENSER CABLE
d. c. supply (see illustration above)

Careful d. c. testing in the factory assures better cable performance in service.

OKONITE Since 1878 **OKONITE insulated wires and cables**

RAILWAY AGE

Post-War Railway Buying and Employment

If there is to be adequate employment after the war, each industry must, indirectly as well as directly, provide its share. For reasons emphasized in an editorial in *Railway Age* last week (October 7, page 537), whether there will be enough employment will be determined *by the amount of buying of durable goods done by business.* Will the railways provide their share of this buying?

National income averaged $72 billion annually in the eight years ending with 1930. In those years the railways made purchases of durable goods (equipment and materials) averaging $1,576 million. Students of the subject agree a post-war national income of $125 to $150 billion will be required to support the national debt and provide enough employment. To contribute *relatively* as much toward employment and a national income of $140 billion as it did contribute to them in 1923-1930, inclusive, railway buying of equipment and materials would have to be $3,000 million a year. Will there be reasons why railway buying should be that much? Is there any possibility that it will be that much?

Efficiency FOR VICTORY

Railway purchases of durable goods averaged $1,576 million in the eight years 1923-1930, inclusive, because traffic and net operating income gave the railways incentive and ability to carry out a large program of rehabilitation, expansion and improvements adopted by them jointly in 1923. These purchases declined to an average of only $575 million in the eight years 1931-1938, inclusive, because traffic greatly declined during the depression leaving the railways with large surplus capacity, and *because net operating income, and consequently, railway purchasing power, greatly declined.* Net operating income averaged $1,098 million when purchases averaged $1,576 million in the years 1923-1930, inclusive. Net operating income averaged only $492 million when purchases in 1931-1938, inclusive, averaged only $575 million. Net operating income declined 55 per cent and purchases 63.5 per cent. The relationship between net operating income and purchases is obvious. Purchases are made only partly from net operating income; but in time of peace when there are no government restrictions on purchases, net operating income *regulates* the amount of purchases made.

Because of current and prospective increases in traffic and earnings, purchases increased in 1941 to $1,221 million, being the largest since 1930. Beginning late in 1941 they have been restricted by government controls, and, in spite of the stupendous increase in traffic, averaged only $1,200 million in the three years 1941-1943, inclusive. In the thirteen depression and war years ending with 1943 they averaged only $753 million annually—less than half as much as in the eight years ending with 1930.

The buying done by railways in the post-war period, like that of other industries, will be determined principally by the same influences as between World War I and World War II—i.e., need for rehabilitation, improvement and expansion of plant, and current and prospective profits. It should be influenced also, like that of other industries, by the need for private enterprise to provide enough employment. If the national income should average $140 billion, how much buying does recent experience indicate the railways would *need* to do, and how much would they be able to do?

The national income increased 38 per cent in 1941 as compared with 1936, and—with little change meantime in transportation competitive conditions—ton miles of railway freight traffic increased 40 per cent; net railway operating income, 50 per cent; and railway purchases of equipment and materials, 70 per cent. National

income in 1941 was $90 billion. An increase to $140 billion would be 55 per cent. On the basis of actual peace-time experience in 1941 compared with 1936, this would provide the railways with not less than 55 per cent more freight traffic than in 1941—about 740 billion ton-miles, which happens to be approximately the freight traffic they will actually handle in 1944—and would cause them, if they had the buying power, to increase their purchases of equipment and materials to at least $2,300 million annually.

But would they have the buying power? While their net operating income increased 50 per cent in 1941 compared with 1936, it declined from $1,484 million in 1942 to $1,362 million in 1943, and apparently will be only about $1,160 million in 1944—or but 16.5 per cent more than in 1941. Their passenger and freight traffic and gross earnings, have continued to increase; but their operating expenses (especially wages) and their taxes have increased much more.

Because of government restrictions, the railways have not done as much buying during the last three years as their needs demanded and their earnings have made possible. They will be able to add for a few years the buying power they have accumulated to the buying power that future earnings will provide. But if they are to be able to render adequate and good service in handling the huge traffic with which a national income of $140 billion a year would confront them, they will have to earn more net operating income annually than the $1,100 million they are earning in 1944. On the basis of experience, they would require at least $1,500 million net operating income annually to enable them to make the purchases of $2,300 million of durable goods annually which they would need to make in order satisfactorily to handle the traffic provided by a national income of $140 billion.

Light Colors for Passenger Car Roofs

It has been suggested that worth-while savings in power or improvement in passenger comfort could be realized if passenger cars, or more particularly passenger car roofs, were finished in light colors. Several years ago, one railroad experimented with a suburban train which was finished outside with aluminum paint. The cars were not air-conditioned and on hot days with a bright sun the temperature in the aluminum-painted cars was ten degrees lower than that in cars having dark-colored sides and black roofs.

Tests made on cars with black roofs show that the heat transmission into a passenger car body from sun load will vary from 12,000 to about 26,000 B.t.u. per hr. and will average more than 17,000 B.t.u. between the hours of 11:00 a.m. and 2:00 p.m. when the sun is high and most of the heat gain is incurred through the roof. A 17,000-B.t.u. heat gain must be offset by about 1.42 tons of refrigerating capacity; and since reflecting factors of paint pigments are known, the value of various colors may be calculated. Thus a gloss-white roof with an 88 per cent reflecting factor would reduce the sun load 1.243 tons to .172 tons, while an olive green with a 14 per cent reflecting factor would effect a saving of only .198 tons.

In most cases, the air-conditioning system has sufficient capacity to take care of all conditions, even though the roofs are black, and under present manpower conditions it would be almost impossible to keep very light-colored roofs clean. One road, however, has compromised on a light gray color which is not too difficult to maintain, and which when clean effects a saving of nearly one ton of refrigeration under maximum sun load. Probably nothing will be done now to modify the effect of the black roofs used on nearly all cars, but since power on cars is at a premium, it would appear that lighter colors for cars to be built or refinished is worthy of consideration.

Equipment for Handling Ties

Among the many problems of producing and treating crossties, none has been brought more sharply into focus that that of tie handling. It has long been the accepted practice to employ both white and colored labor for this purpose, with varying degrees of success. In the production areas, at concentration yards and at treating plants, tie handlers customarily have shouldered and carried crossties for distances ranging up to 100 ft. or more.

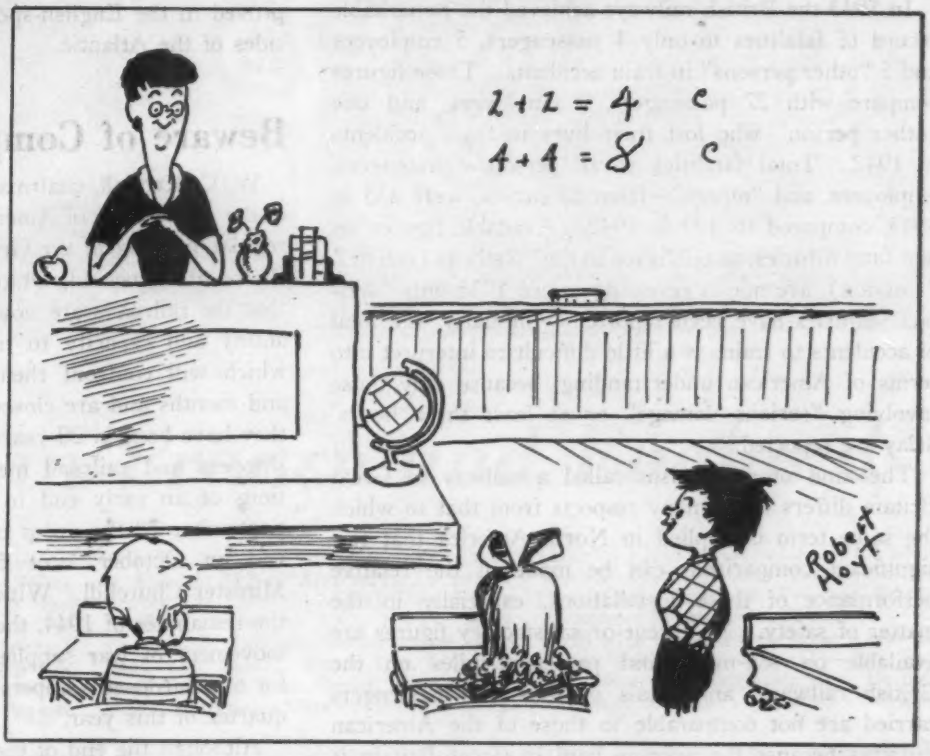
An oak tie, as it comes from the saw, may weigh from 180 lb. to 225 lb. or possibly more, depending on size, moisture content and other characteristics. A part of this weight is lost in seasoning, but an appreciable addition is made during preservative treatment. Pine ties are somewhat lighter, but it takes a stalwart man to handle them. Yet the most efficient handler in a gang often is a scrawny individual who weighs less than 125 pounds. Compensation usually is on a piecework basis. Earnings are comparatively good, but absenteeism frequently was a problem long before war brought the term into such general use. The prevalent scarcity of tie handlers results from several causes. First has been losses to war industries with their higher wages as the basic incentive. Induction into the armed forces has been a secondary cause.

Various mechanical or semi-mechanical devices have been developed to assist in loading, unloading and stacking ties during the present labor crisis. Some of these developments have not progressed beyond the blueprint stage. Others have been built without the benefit of specific plans and designs. Several have been of considerable assistance in the emergency. Of all the devices of this nature that have been developed during this war, it is doubtful if any, in its present stage, has attained a degree of efficiency sufficient to warrant its retention and use in competition with manual handling methods when labor again is plentiful.

War has focused the spotlight of attention on one

of the weakest and yet one of the most important phases of crosstie production and treatment. The economics of the problem also must receive due consideration. High rates of pay will not overcome the comparative frailty of the human body, and neither will they, in this instance, promote more efficient production and treatment. The problem deserves careful study. Research, experiments and tests should be encouraged to bring about the mechanization of one of the most arduous tasks within the industry—a task that too long has been left to manual labor. A few minutes of sober reflection upon the extensive development of the work equipment, mechanical tools and devices that have brought about the virtual mechanization of track maintenance during the last few years points the way and refutes any hasty inference that mechanical tie handling methods are impossible.

The Correct Answer



"To 'biddle' means to persecute, annoy, or otherwise disturb a man when he is busy at an important job."

After Germany Quits

What will happen to domestic transportation after Germany quits? Presumably the steamship lines will be able to take on some of the traffic to the Pacific, but already there are reports of shortage of bottoms for this purpose and it appears certain that the railways will have to bear most of the burden. This focuses attention not only upon the transcontinental railways, but also upon the Pacific Coast ports.

Under military censorship rules, exact data cannot be published as to the movement through individual ports, but the overall picture may be discussed, and, from a railway point of view, it is most encouraging. The same set-up and the same co-operative spirit that have prevailed at the Atlantic ports are in effect on the Pacific Coast. The port traffic section of the Car Service division of the A. A. R. has an assistant manager stationed at San Francisco, and the methods used in keeping the Atlantic ports fluid have been equally successful on the opposite coast. Moreover, the experience gained during the period of tremendous pressure on the east coast will be invaluable when the pressure on the west coast is increased.

What has actually happened along the Pacific seaboard is that grain shipments, formerly an important item, have entirely disappeared, while coastal shipments, formerly nearly as important as export freight, have dwindled to a mere trickle. The increase in what is termed "other exports," however, would have been unbelievable a few years ago. Using 1940 figures as a basis of comparison throughout, export freight movement was increased by 35 per cent in 1941; by 430 per cent in 1942; by 1,017 per cent in 1943; and by 1,291 per cent in the first eight months of 1944. These astronomical figures must be further evaluated as, meanwhile, grain exports decreased 100 per cent and coastal traffic 94 per cent. But even after taking this into account, the total movement through Pacific ports for the first eight months of 1944 shows a net gain as compared with the same period in 1940 of 666 per cent, which is still an astronomical figure in any mathematician's language.

The machinery that has been set up to make such a performance possible is by no means static. The figures cited show a continuous and pyramided improvement. When the full story of how it was done can be told, it will make fascinating reading. It will be a tribute to American resourcefulness and ingenuity and to the American railway officer and employee, many of whom, in the area referred to, have died from overwork.

And while at present the entire story cannot be told, the figures cited give comforting assurance that, when Germany is defeated and we can devote our entire attention to Hirohito and his cohorts, the vitally necessary transportation facilities will be available.

Railway Safety in Britain

In 1943 the British railways achieved the remarkable record of fatalities to only 4 passengers, 5 employees and 5 "other persons" in train accidents. These figures compare with 27 passengers, 9 employees, and one "other person" who lost their lives in train accidents in 1942. Total fatalities to all persons—passengers, employees, and "others"—from all causes, were 455 in 1943, compared to 499 in 1942. Available figures on non-fatal injuries, as published in the "Railway Gazette" (London), are not as revealing; since 1935 only "serious" injuries have been reported. Similarly, the total of accidents to trains is a little difficult to interpret into terms of American understanding, because only those involving "serious damage" or at least three hours' delay are reported.

The kind of mechanism called a railway in Great Britain differs in so many respects from that to which the same term is applied in North America that few significant comparisons can be made of the relative performance of these installations, especially in the matter of safety. No recent or satisfactory figures are available on ton-miles and passenger-miles on the British railways, and totals of tons and passengers carried are not comparable to those of the American railways because the average haul in Great Britain is so much shorter. The density of traffic throughout Britain has permitted the elimination of grade crossings—and other measures to exclude outsiders from access to railroad property—to a far greater degree than is economically justifiable or even possible in most areas of the North American continent. Lower wage rates and concentration of traffic have permitted a much higher intensity of employment in railroad work in Britain.

Over there, for example, considerable numbers of ticket collectors and other custodians are employed even at country stations, who are thus able to prevent passengers and trespassers from exposing themselves to danger to the degree which chance-takers find easy on most American railways; and all stations are provided with car-floor-level platforms. Modest wage rates and high traffic density have also joined to make economically feasible in Britain the frequent block stations required to provide absolute manual (or controlled-manual) blocking throughout the realm.

Such conditions—attributable entirely to geographical and economic factors beyond the scope of managerial skill—have given the British railways an opportunity to achieve a record of safety, both for employees and patrons, which must stand at or near the top for the whole world. These conditions, however, existed in 1942 as well as in 1943—yet railroad fatalities from all causes were 9 per cent less in the latter year, despite an increase in traffic. The American railroads with, probably, a somewhat greater increase in traffic (1943 compared to 1942) than that which occurred in Britain, effected a decrease of 6 per cent in fatalities. It is evident that, whatever the disparity in the external circumstances, safety which can be affected by improved managerial performance is being steadily improved in the English-speaking railway world on both sides of the Atlantic.

Beware of Complacency

W. C. Kendall, chairman of the Car Service division of the Association of American Railroads, at the sixtieth regular meeting of the Great Lakes Regional Advisory Board at Cleveland, Ohio, on September 27, reported that the railroads are now at a critical period in their ability and capacity to meet the impact of the load which will confront them during the ensuing weeks and months and are closer to a car shortage now than they have been in 20 years. Some complacency among shippers and railroad men has resulted from predictions of an early end to the war in Europe, but on September 28 the ardor of forecasts, which placed the end on October 1 or 5, was dampened by Prime Minister Churchill. With two wars continuing during the remainder of 1944, there will be no let-down in the movement of war supplies and consequently no relief for overburdened shippers and railroads during the last quarter of this year.

Although the end of the war in Europe might result in the curtailment of the manufacture of war materials for Europe it might also result in concentration on the manufacture of war materials for the Pacific area. Under these conditions, the longer rail haul to the Pacific coast will entail the retention of cars in service a longer period of time with the effect of diminishing the car supply.

Even if the war in Europe should end in a few weeks and the volume of traffic moving to Europe were cut substantially, the large amount of available domestic traffic gives no grounds for complacency. Much of the grain harvested in June, July and August, for example, is still in elevators awaiting movement to market, while the estimate made on September 1 for the grain crop that normally moves during the fourth quarter of the year from Montana, Minnesota, North Dakota and South Dakota is 1,141,251,000 bu. At 1,800 bu. per car, according to the Office of Defense Transportation, this amounts to 634,028 carloads, or the utilization of 79,253 cars on an 8-day turn-around basis. Other traffic which will not be affected by a sudden cessation of hostilities in Europe is coal and perishables. The minimum requirements for consumption and stock piling during 1944 have been fixed at 620,000,000 tons of bituminous coal, or 35,000,000 tons in excess of that produced in 1943. The requirements of perishables this year are from 10 per cent to 15 per cent above those of last year which in turn were that much in excess of previous peaks.

In view of these circumstances, it is reasonable to assume that the traffic handled by the railroads will continue at a high volume during the fourth quarter of 1944 and into 1945.

U. S. Army Signal Corps Photos

M.R.S. in France and England

(Top Left)—Captured Streamlined Train in Carentan, France. The Transportation Corps Quickly Converts Such Hauls into Hospital and Troop Trains. (Top Right)—Loading a Diesel Locomotive on a Sea Train at an English Port for Cross-Channeling to France, Where It Will Be Used in Switching Service. (Middle Left)—First Passenger Train of the 2nd M.R.S. Arrives in Carentan. Facing the Camera Is Maj. Gen. Frank S. Ross, Chief of T.C., E.T.O.; Brig. Gen. C. L. Burpee, Commanding General, 2nd M.R.S., Faces the Train as Well as Brig. Gen. Ewart Plank, Commanding General Communications Zone. (Middle Right)—Assembly Depot at an English Port. (Lower Left)—Hospital Cars, Converted from Pre-war English Passenger Coaches, Are Completely Outfitted with Modern Operating Room and Litter Wards. (Lower Right)—This Tank Car, Shown in England, Now Delivers Gasoline, Oils and Lubricants in France.

One of the Many Line-Change Projects on the Santa Fe to Reduce Curvature and Improve Operating Conditions Generally

Santa Fe Improves Coast Lines

Extensive construction program is required to achieve a substantial increase in line capacity to handle traffic load imposed by war-time conditions

PART I

CONFRONTED with a large general increase in traffic over its entire system, and a reversal of the direction of loaded movement on many of its lines, both due largely to war-time influences, the Atchison, Topeka & Santa Fe found it necessary in 1943 to embark on a broad program of improvements designed to insure its ability to handle the increased traffic load imposed upon it. While the improvements have been widespread over the system as a whole and have included a wide variety of projects, the most extensive and concentrated phases of the program have been carried out on its Coast Lines. On these lines, where traffic has increased more than 160 per cent, and where the problem presented by a reversal in the direction of loaded movement has been particularly severe, the program of improvements was undertaken early in 1943.

This program, which is scheduled for completion this year, has involved the general lengthening of passing tracks on all of the main lines of this grand division; the enlarging and lengthening of nearly all the important yards, including the construction of long auxiliary freight tracks at most of them; the construction of additional second trackage at a number of locations; and the installation of centralized traffic control on 117 miles of line. The magnitude of the program is indicated by the amount of new trackage that is being built in connection with it, which includes, in approximate figures, 80 miles of passing tracks, 98.5 miles of yard tracks, 30.5 miles of second tracks, and 23.5 miles of auxiliary tracks.

The Coast Lines of the Santa Fe comprise that portion of the system west of Belen Jct., N. M., and Isleta, at which points they connect with the company's network of lines that extends eastward to Chicago and southward to the Gulf of Mexico at Galveston, Tex. Between Chicago and Newton, Kan., the company has a double-track main line; westward from Newton to the junction with the Coast Lines it has two predominantly single-track main routes, one via La Junta, Col., and the other through Amarillo, Tex. At Dalies, N. M., which is 10 miles west of Belen, these two lines converge in the double-track main line of the Coast Lines. This latter line reaches westward 721 miles to Barstow, Calif., where it divides, one line extending northward to the San Francisco Bay area and the other southward to the Los Angeles area and other parts of Southern California.

Four Operating Divisions

The Coast Lines are divided into four main operating divisions. That part of the main line from Belen Jct. to Seligman, Ariz., is known as the Albuquerque division. The territory between Seligman and Barstow comprises the main line of the Arizona division which also includes that part of the San Francisco line between Barstow and Mojave, a distance of 72 miles. Northward from Mojave to Kern Jct. (Bakersfield), 67 miles, the Santa Fe operates over the Southern Pacific; north of the latter point the line to the San Francisco Bay area, which is single track, is known as the Valley division.

That portion of the Coast Lines extending from Barstow into Southern California is known as the Los Angeles division. From Barstow to San Bernardino, 81 miles, this is a double-track line. Between San Bernardino and Los Angeles there are two main lines, both predominantly single-track. One of them, the most northerly, passes through Pasadena, and is 60 miles long. The other, extending via Riverside and Fullerton, is somewhat more circuitous, being 72 miles long, and in general

has less curvature and easier grades. Generally speaking, the line through Pasadena is used largely for passenger traffic, while the southerly route carries the bulk of the freight traffic. From Los Angeles, a single-track branch line, 28 miles long, extends to the harbor at Wilmington. From Fullerton, a point on the southerly route between San Bernardino and Los Angeles, another single-track line extends southward along the coast to serve the San Diego area, the distance from Fullerton to San Diego being 103 miles.

With the outbreak of the war, a process of rapid industrialization of the West Coast began, which immediately was reflected in a sharp increase in the traffic load imposed on the Santa Fe's Coast Lines. Another factor adding to this load was the movement of materials of war from points in the east to the West Coast for trans-shipment to the Pacific Theatre. Being a transcontinental route with the equivalent of a double-track main line from Chicago to the Coast, and with lines serving the principal ports in California, i.e., at San Francisco, Los Angeles and San Diego, it was natural that the Santa Fe should be called on to handle a large share of this traffic.

Extent of Traffic Increase

As a result of these developments the gross ton-miles of freight traffic handled by the Coast Lines in 1943 were more than 2½ times those carried in 1939, the last pre-war year. Specifically, the increase was from 11,151,649,000 gross ton-miles in 1939 to 29,409,484,000 gross ton-miles in 1943. The magnitude of the load imposed on these lines as a result of the war effort comes into sharper focus when it is realized that the gross ton-miles carried in 1943 were likewise about 2½ times the figure for 1929.

This is only part of the story. Normally, the loaded movement on the Coast Lines is preponderantly eastward, this being largely attributable to the considerable volume of perishable traffic that is originated in the Coast area for shipment to points in the East. However, the increase in traffic that has occurred because of war-time influences is made up largely of shipments destined for West Coast industries and ports, with the result that there has been a reversal of the direction of loaded movement. This is best illustrated by a glance at the figures showing the east and west movements in 1939 and 1943, respectively. In the former year the Coast Lines handled 6,121,981,000 gross ton-miles of freight traffic eastward and 5,029,668,000 gross ton-miles westward. In 1943, the eastward movement increased 124 per cent to 13,706,458,000 gross ton-miles, whereas the westward movement increased 212 per cent to 15,703,026,000 gross ton-miles. Even more striking are the figures showing the number of commercial loads passing Albuquerque, N. M., and Belen, gateways to the Coast Lines, during the two years under comparison. In 1939, the eastward movement through these points was 86,690 loads, while the westward movement was 53,951 loads. In 1943, the eastward movement had increased about 1½ times to 128,841 loads, whereas the westward movement had increased 4½ times to 241,436 loads.

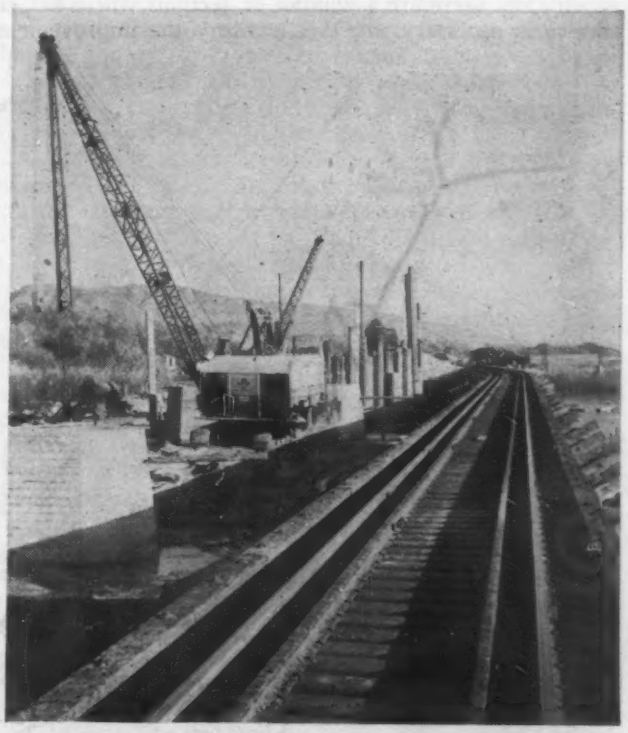
To handle the record volume of traffic imposed, it was necessary to increase both the number and length of the trains operated. However, the existing facilities placed definite limitations on the extent to which this could be done, and it was apparent that a broad program of physical improvements would have to be undertaken if the necessary increase in capacity was to be achieved. Important among these needed improvements was the lengthening of the passing tracks on practically all main routes of the Coast Lines, especially on that part of the main line that passes through Arizona where the operation of trains of economical lengths had heretofore been prevented by a state law limiting freight trains to 70 cars. Fortunately, this barrier to efficient operation had been removed, effective September 15, 1942, by an order of the Interstate Commerce Commission suspending, during the period of the present war, the operation of state laws limiting the number of cars in a train.

On the San Diego Line

To permit the longer trains to be handled efficiently in yards and terminals, the program called for major changes at nearly all of the important yards on this grand division, these changes including the extension of existing tracks, the provision of additional tracks, and in many instances the construction of long auxiliary running tracks adjacent to the yards in order to promote flexibility in the handling of trains and to expedite train movements into and out of the yards.

A special problem was presented by the situation on the line to San Diego. Due to the war, military and industrial activities in the San Diego area had climbed to unprecedented heights, with a proportionate increase in the traffic load imposed on the Santa Fe's single-track line serving it. In fact, this increase in traffic has been such that an average of fifty trains a day are now being operated over the line. In view of this situation, it was apparent that special measures would have to be taken to increase the capacity of the line. To do this, it was decided to install a centralized traffic control system extending from a few miles south of Los Angeles through Fullerton to San Diego. The program of improvements for the San Diego line also included a substantial amount of track work, including the extension of existing passing tracks, the construction of new passing sidings, and the building of a considerable amount of second track.

Also included in the program was the second tracking



Here, a New Steel Girder Bridge Is Replacing an Open-Deck Pile Trestle on a Curve-Reduction Project

of most of the line between Fullerton and Hobart Yard (Los Angeles), a distance of 18 miles. This section of line is not only a link in the southerly main-line route between San Bernardino and Los Angeles, but also carried traffic moving between Los Angeles and the San Diego line. Other track work in the program as a whole included the construction of approximately ten miles of additional second track between San Bernardino and Riverside, a point on the southerly route to Los Angeles. It is also pertinent to mention that, immediately prior to the present program, second track was constructed between Belen and Dalies, a distance of 10 miles.

In describing the improvement program in detail, consideration will be given first to that part of the main line between Belen and Los Angeles, including the line from Los Angeles to the harbor at Wilmington. The remainder of Part I will be devoted to this phase of the program, while Part II will deal principally with the work done on the Valley division and on the line to San Diego.

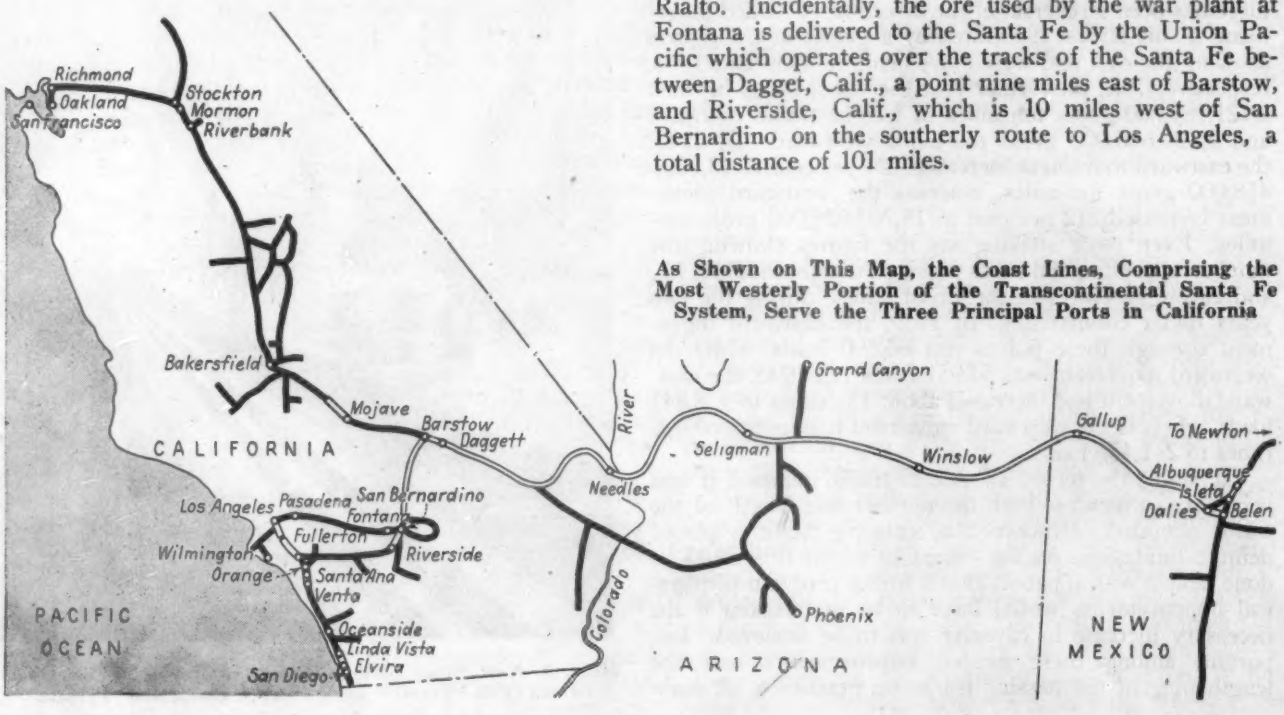
Extension of Passing Tracks

Taking up first the lengthening of passing tracks on the main line from Belen westward, the existing passing tracks in the territory between Belen and Gallup, 140 miles, were generally of sufficient length to handle 90-car trains but a short distance west of Gallup the line crosses into Arizona where the existing passing tracks were generally designed to handle trains not exceeding 70 cars. Between Belen and Winslow, Ariz., 268 miles, the grades are such that trains as long as 110 cars can be operated in both directions, and to make this possible it was necessary to lengthen the majority of the passing tracks accordingly. In the territory between Belen and Gallup alone 12 passing tracks in each direction are being lengthened.

West of Winslow somewhat heavier grades are encountered. Between this point and Barstow, 461 miles, the ruling grade in both directions is 1.42 per cent, and, in addition, there are a number of sections where helper service is necessary. In this territory the improvement program was predicated on the operation of trains of 100 cars in both directions, and to this end it was necessary to lengthen about half of the passing tracks. Incidentally, the railroad recently placed in service between Winslow and Barstow a fleet of 5,400-hp. Diesel-electric freight locomotives, thus making it possible to effect a substantial increase in the length of freight trains in this territory.

Between Barstow and San Bernardino, 81 miles, the line traverses a mountainous territory requiring ruling grades of 2.2 per cent against eastbound traffic and 1.6 per cent against westbound movements. Until recently an arrangement was in effect with the brotherhoods limiting train lengths over these grades to 50 loads. This artificial restraint on efficient operation has now been revoked, permitting the railroad to operate trains of such lengths as may be permitted by the grades and other factors. With the loaded movement predominantly westbound, trains in this direction are limited to a maximum of 90 cars; hence the program called for extending the passing tracks as necessary to accommodate such trains. On the other hand, with the eastbound movement consisting of a larger percentage of empties, trains containing a maximum of about 100 cars may be operated in this direction, with the result that the program entailed the lengthening of the eastbound passing tracks accordingly. Practically all the existing passing tracks between Barstow and San Bernardino were involved in the improvement program and, in addition, one new passing track was constructed.

The northerly route between San Bernardino and Los Angeles is predominantly a route for passenger trains; hence it was involved only to a limited extent in the program for lengthening passing tracks. In fact, only two such tracks on this line were lengthened, one at Rialto, about four miles west of San Bernardino, and the other to Fontana about four miles west of Rialto. The need for the longer passing tracks at these two locations is explained by the fact that there is an extensive war plant at Fontana which consumes a large amount of ore that comes in from the east. It was to accommodate the trains of empty ore cars returning eastward that it was necessary to lengthen the passing tracks at Fontana and Rialto. Incidentally, the ore used by the war plant at Fontana is delivered to the Santa Fe by the Union Pacific which operates over the tracks of the Santa Fe between Dagget, Calif., a point nine miles east of Barstow, and Riverside, Calif., which is 10 miles west of San Bernardino on the southerly route to Los Angeles, a total distance of 101 miles.



As Shown on This Map, the Coast Lines, Comprising the Most Westerly Portion of the Transcontinental Santa Fe System, Serve the Three Principal Ports in California

Work on the Southerly Route

On the southerly route between San Bernardino and Los Angeles, where the existing passing tracks were generally limited to a capacity of about 70 cars, it was desired to lengthen the sidings as necessary to permit the handling of 90-car trains. Accordingly, in the territory between San Bernardino and Fullerton, 46 miles, the program called for the extension of seven passing tracks and the construction of two new sidings. In addition, as already noted, a considerable amount of second tracking was done on this line, part of which was carried out between San Bernardino and Riverside, which territory is operated jointly with the Union Pacific. Prior to the recent work, this was double-track territory except for about three miles. In the improvement program, sufficient new trackage was built to complete the second tracking of the 10-mile section except at a river crossing where, because of the steel shortage, it was not possible to augment the existing single-track span with an additional bridge for the second track. To expedite train movements over the short section of single track at the bridge, the turnouts at both ends were fitted with spring switches.

The improvement work on the southerly route also included, as already noted, the construction of second trackage between Hobart yard, which is about seven miles south of Los Angeles, and Fullerton, a distance of about 18 miles. In this section a total of about 16 miles of second track was built, leaving a gap of two miles at the location of two single-track bridges where additional spans for carrying a second track could not readily be obtained at this time. However, the presence of this section of single track was counteracted somewhat by installing power switches in the turnouts at the ends, which are incorporated in the CTC system on the line to San Diego. The work between Hobart yard and Fullerton also included the construction of a new passing track, the extension of three others, and the enlargement of the yard at Fullerton.

On the 28-mile line from Los Angeles to the harbor at Wilmington, train service formerly consisted of one train of 35 or 40 cars each way daily. However, the movement of war goods to the harbor in great volume has been reflected in a large increase in traffic over this single-track line, requiring the operation of longer trains at more frequent intervals. To make this possible, the program called for the lengthening of three existing passing tracks to permit them to handle 70-car trains, and the construction of three new passing tracks of equivalent length.

Yard Expansion Work

The work of enlarging freight yards comprised an important phase of the improvement program. Since only a small proportion of the westbound traffic delivered to the Coast Lines is consigned to intermediate points, the trains normally are not broken up until they reach Barstow, where considerable yard work is done to separate freight consigned to the Valley division from that destined for Southern California points. However, between Belen and Barstow there are four district terminal yards, namely, at Gallup, Winslow, Seligman and Needles, and the improvement program called for enlarging all these yards on an important scale.

In the work at Gallup, 10 of the yard tracks were extended sufficiently to give them capacities of from 110 to 125 cars, thereby effecting an increase in the capacity of the yard of more than 500 cars. West of this yard a new freight running track was constructed which was made of sufficient length (8,300 ft.) to accommodate a 110-car train and at the same time to provide a switching tail with a capacity of 40 cars. This track serves both as an outbound track for westbound trains and as a receiving track for eastbound trains. East of the Gallup yard an existing track was extended about 3,400 ft. to provide a departure track for eastbound trains, with a capacity of about 118 cars. These outbound tracks make it possible for trains to pull out of the yard in advance of departure, thereby releasing tracks in the yard for switching purposes, while the receiving track for eastward trains permits such trains to clear the main line even though a yard track to accommodate them may not be available at the time of arrival.

Proceeding westward from Gallup, the next district terminal yard is at Winslow. At this location, eight of the existing yard tracks, originally constructed to handle 70 cars, have been extended sufficiently to enable them to receive 110-car trains, thereby effecting an increase of 280 cars in the capacity of the yard. The work here also included the construction west of the city of two new tracks, each 6,340 ft. long, to serve as eastbound and westbound freight leads.

Continuing westward, the next district terminal yard is at Seligman. Here the capacity of the yard was increased about 280 cars by extending eight tracks sufficiently to permit them to handle from 90 to 116 cars. Also, an auxiliary running track 1¼ miles long for eastbound trains was provided by constructing a 5,650-ft. extension to an existing track east of the yard.

Changes at Needles

At Needles, the next district terminal yard, 13 tracks were lengthened to hold from 73 to 112 cars, thereby increasing the capacity of the yard 412 cars. At the east end of the yard, the existing inbound freight running track for westward trains was extended 4,440 ft., and the outbound running lead for eastward trains was extended 3,900 ft. Immediately west of Needles yard rather extensive track changes were made to provide a long auxiliary track for westbound freight trains. In these changes the existing eastbound main track was incorporated as part of the new running track, which is slightly less than two miles long, and a new eastbound main track was built on an improved alinement.

At Barstow the capacity of the westbound yard was increased 660 cars by the construction of five new tracks and by lengthening eight existing tracks an average of 800 ft. East of this point two switching leads, each 9,000 ft. long, were provided, one for eastward (outbound) trains and the other for westward (inbound) trains. West of the yard on the line to San Bernardino a long auxiliary track for eastward (inbound) trains was provided by extending an existing siding 6,000 ft., and a new track 10,700 ft. long was constructed to serve as an auxiliary running track for westward (outbound) trains.

Directly west of Barstow on the single-track line to Mojave a new passing track 11,620 ft. long was constructed which, being largely for the use of westbound trains, has a power switch at the east end and a spring switch at the west end.

In handling the present-day volume of traffic, the yard at San Bernardino was found to constitute a particularly troublesome location. At this location, the facilities consisted originally of a main yard directly at San Bernardino and a "pre-cooler" yard between San Bernardino and Colton, which is a point three miles to the west on the southerly line to Los Angeles. To enhance the capacity of the latter yard, 19 new tracks having a total

(*Continued on page 590*)

Signal Section Holds Session

Annual meeting cancelled, but Committee of Direction meets to act on reports from the standing committees

AS a means of reducing passenger traffic in war-time, the Signal Section, A. A. R., on September 7, cancelled the annual meeting which had been scheduled for October 4 and 5 in Chicago. In order to carry on the work of the Section, the Committee of Direction held a meeting with the committee chairmen in Chicago on October 4, at which time the reports of the 11 standing committees, as published in the advance notice, were discussed, and action was taken to dispose of these reports as well as to outline work of the committees for the coming year. J. P. Muller, engineer of signals and telegraph, Boston & Maine, chairman of the Signal Section for 1944, presided.

The reports of the committee on economics of signaling and the committee on signaling practice include information of interest to railroad officers in general, and abstracts of these reports are presented herewith. The remainder of the committee reports included requisites, specifications and standard drawings of interest primarily to signaling officers.

Statement Covering Train Performance July 20 to 26, Inclusive, 1943, Compared with Period March 24 to 30, Inclusive, 1944

	Freight		Short and local turns		Passenger	
Westward	Before	After	Before	After	Before	After
Number of trains	74	69	32	36	30	27
Elapsed time	625h52m	436h11m	77h36m	83h50m	114h57m	101h11m
Train miles	9035.4	8424.9	891.9	987.3	3663.0	3296.7
Average speed	14.4	19.3*	8.9	11.8	31.9	32.6
Average time per train	8h27m	6h20m	2h26m	2h20m	3h50m	3h45m
Eastward						
Number of trains	66	67	33	33	29	32
Elapsed time	459h31m	388h05m	51h03m	75h18m	108h09m	103h13m
Train miles	8058.6	8180.7	951.2	864.2	3540.9	3709.0
Average speed	17.5	21.1	18.6	9.1	32.7	37.8
Average time per train	6h57m	5h47m	1h33m	2h17m	3h43m	3h14m

* If 23 hours deducted account 4 engine failures average speed would increase to 20.3.

	All westward trains		All eastward trains		All trains	
	Before	After	Before	After	Before	After
Number of trains	136	132	128	132	264	264
Elapsed time	818h25m	621h12m	618h43m	566h36m	1437h08m	1187h48m
Train miles	13590.3	12708.9	12514.7	12951.9	26105.0	25660.8
Average speed	16.6	20.5	20.2	22.9	18.2	21.6
Average time per train	6h01m	4h42m	4h50m	4h18m	5h27m	4h30m

It will be noted that the average speed of all trains has been increased from 18.2 to 21.6 miles per hour or 18.7 per cent, while the gross ton miles per train hour increased from 30,800 to 43,200.

ECONOMIC STATEMENT

1. *Cost of Installation:*		
(a) Chargeable to capital investment	$842,100.00	
(b) Chargeable to operating expense	95,538.00	
(c) Total		$937,638.00
2. *Net Saving per Annum:*		
(a) Payroll savings, net	$42,796.00	
(b) Train and engine wages	105,277.00	
(c) Locomotive fuel	19,452.00	
(d) Locomotive service	27,983.00	
(e) Car days	26,221.00	
(f) Total		$221,729.00
3. *Increased Maintenance and Operation per Annum* (Reflected in Item 2-a which is net saving)		
4. *Net Saving Exclusive of Interest Charges*		$221,729.00
5. *Interest* (5% of $842,100.00)		42,105.00
6. *Net Saving*		$179,624.00
7. *Annual Return over and above Interest Charges:*		
(a) On capital investment (6 ÷ 1-a)		21%
(b) On total cost (6 ÷ 1-c)		19%

Economics of Signaling

The committee on economics of signaling submitted reports on: Economics of converting automatic block signaling to C. T. C. on the Denver & Rio Grande Western and on the New York, Chicago & St. Louis; methods of forecasting and proving the value of signaling, including tables of road freight locomotive utilization on 82 railroads; progress report on train-hour value; economic results of alternating current primary battery track circuits; use of off-track equipment; economics of yard communication systems; and, economics of coded carrier C. T. C.

Converting Automatic Block to C. T. C.

The Denver & Rio Grande Western recently completed an installation of 127 miles of centralized traffic control between Agate, Utah, and Helper. Automatic block signals were formerly in service on this single-track line.

Approximately 38 trains per day are operated in this territory. An analysis of the train operation for comparable seven-day periods before and after the installation of centralized traffic control is summarized in the table at the left.

On the Nickel Plate—The New York, Chicago & St. Louis has converted 21.6 miles of single-track automatic block signaling to centralized traffic control. This is a section of single-track main line between two sections of double track with an average of 54 trains per day before and 62 trains per day after the C. T. C. system was installed in 1942.

The west end of the double track had been equipped with a spring switch with controlled signals. The east end of the double track had been interlocked, both of which installations were retained with supervisory control of the signals under C. T. C. operation. There are five passing tracks, three of the switches of which had previously been interlocked and two had been operated by remote control. One interlocking was retained and used as the C. T. C. control station and all of the other passing track switches were arranged for power operation under the control of the C. T. C. operator.

An analysis of typical 30-day periods before and after the installation shows the following savings:

Average time saved on manifest freight trains	4.5 minutes, or 135 minutes per day
Average time saved on other freight trains	23.7 minutes, or 284 minutes per day
Total daily train and engine savings	419 minutes per day
Total annual train and engine savings	2,549 hours
Total annual car days saved	6,903
Total annual train stops eliminated	6,205

The time saving is particularly interesting since five of the siding switches were already interlocked prior to the

installation and most of the credit for time saved is directly attributable to the elimination of the timetable and train order system.

ECONOMIC STATEMENT

1. *Cost of Installation*:			
(a) Chargeable to capital investment:			
Signaling	$54,133.00		
Track changes	20,933.00		
Telephone work	678.00		
Total		$75,744.00	
(b) Chargeable to operating expense:			
Signaling	$8,884.00		
Track changes	7,899.00		
Telephone work			
Total		16,783.00	
(c) Total			$92,527.00
2. *Gross Saving per Annum*:			
(a) Payroll savings		$6,600.00	
(b) Train and engine hours		25,490.00	
(c) Train and engine stops		16,940.00	
(d) Total			$49,030.00
3. *Increased Maintenance and Operation per Annum*			5,000.00
4. *Net Saving Exclusive of Interest Charges*			$44,030.00
5. *Interest* (5% of $75,744.00)			3,787.00
6. *Net Savings*			$40,243.00
7. *Annual Return over and above Interest Charges*:			
(a) On capital investment (6 ÷ 1-a)			53%
(b) On total cost (6 ÷ 1-c)			43%

Forecasting Value of Signaling—An improved method of train operation saves road train hours and locomotive hours. The locomotive hours generally exceed the road train hours due to double heading, helper service, tie-ups, etc. In 1942, the average locomotive mile per trainmile for all railroads in the United States was 1.16.

The committee obtained from the Bureau of Railway Economics, A. A. R., information showing the average locomotive hours per trip for 82 railroads in eight regions of the United States for the year 1942 which is used as the basis for an example to determine the locomotive saving. The average hours per locomotive trip include not only crew hours but time in and out of enginehouses, shop time or other time and averaged 22.65 hours in 1942 for the 82 railroads. Time was distributed as follows:

Average Locomotive Hours Per Trip

Crew hours	8.68
Time in and out of enginehouse, etc.	10.33
Unserviceable	2.96
Stored	0.59
Total hours per trip	22.56

Assuming the average locomotive hours per trip is 22 hours and that a train is dispatched every hour, such a schedule would require 44 locomotives. Assume that the trip time can be reduced one hour, then Engine No. 1 will be available to leave initial terminal for its second trip at 6 p. m. of the second day, instead of 8 p. m., thus saving 2 locomotives, or 11.1 per cent of motive power.

The formula is based on the principle that a saving in the trip time of motive power whether in road time, shop time or other time, will produce savings in motive power in direct relationship between the reductions in these times to the total trip time.

If the improved method of train operation saves 67.7 locomotive hours per day in road freight service, then on the basis of 22.56 locomotive hours per trip, the saving is 3 locomotives.

Assume the improved method of train operation saves 66 freight train hours per day, each train averaging 50 cars. There is a reduction of 3,300 car hours in the requirements for freight car equipment.

Signaling Practice

The committee on signaling practice presented reports on: Revised requisites for signal protection at spring switches; revised requisites for centralized traffic control; progress report on the practicability of a flashing-light aspect for signals; and, a discussion of the train communication system for road service.

Train Communication—The report on train communication opened with a brief explanation of the inductive system, and under the heading of advantages to be derived from the use of train communication system, the following statements were given:

1. Between head and rear ends of freight trains, to confer regarding:
   (a) Return of flagman.
   (b) Air brake test.
   (c) Occupying and clearing main track at sidings.
   (d) Defective equipment.
   (e) Shifted loads.
   (f) Derailed cars.
   (g) Distance to go for clearance on sidings.
   (h) Train parted.
2. Between train and block station to confer regarding:
   (a) Reporting clear of and obtaining permission to enter block in manual block territory.
   (b) Changes, if more favorable, in occupancy of block in manual block territory.
   (c) Permission to enter main track and report clear of main track at sidings.
   (d) Delays to train so that dispatcher can arrange movements of other trains.
   (e) Defective equipment or shifted loads as reported by track forces or others.
   (f) Disposition to be made of defective equipment.
   (g) Fires on or along the track, or defective rail or track.
   (h) Parted train.
   (i) Derailed cars.
3. Between trains to confer regarding:
   (a) Defective equipment on shifted loads observed on other trains.
   (b) Track or wayside conditions.
   (c) Locations of trains when one is following another.

The system is not radio and does not require permits for installation, wave length assignment, nor licenses from the Federal Communications Commission for its operation and maintenance.

Flashing Light Aspects—A compilation of reports from a questionnaire shows that 20 major railroads are using a total of 320 flashing signals for railroad signal purposes, as listed in the table, bottom left.

These installations have demonstrated that a flashing light aspect is satisfactory for railway signaling and is readily distinguishable under all conditions. The most suitable flashing speed is approximately 60 flashes per minute with the light alternately half second on and half second off. Flashing yellow and flashing green may be used for less restrictive indications than steady lights of the same color. Flashing red may be used where special action is required after stopping. Other uses of flashing aspects are to distinguish train order or manual block signals from interlocking or automatic signals or for other special purposes.

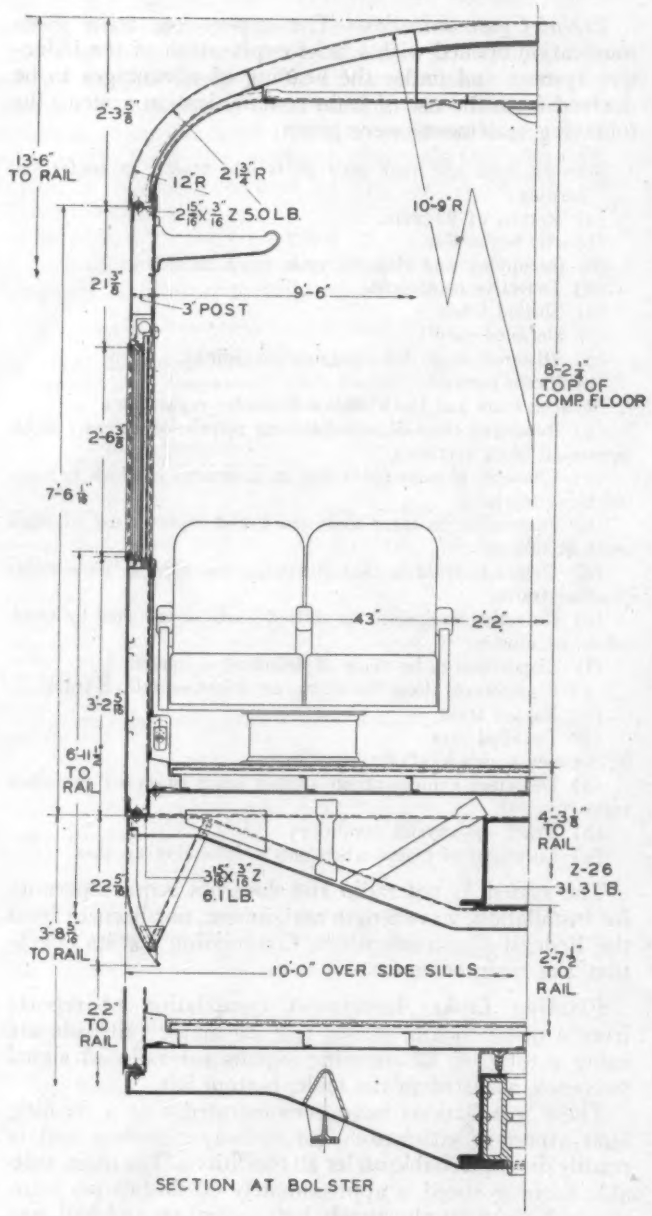
Number of railroads	Flashing signals in service	Aspects	Purpose
2	81	Flashing yellow	For advance approach or medium speed indications.
2	58	Flashing yellow under one or more reds	For slow restrictive indication.
1	13	Flashing green	On dwarf signal for high speed proceed indication.
10	138	Flashing red, yellow or green	For train order or manual block signals to distinguish from interlocking or automatic signals.
1	4	Flashing red	To indicate dragging equipment.
1	2	Two flashing yellows	To indicate dragging equipment.
1	2	Flashing lunar white	To stop freight train in case operator notes defective equipment.
2	22	Flashing red or yellow	Hump yard signals.

What Rolling Stock Will Be Like

Builders' designs for passenger cars of the future already established — More changes expected in freight than in passenger cars

By E. D. Campbell,

Vice-President, American Car and Foundry Company



Framing of a Low-Alloy, High Tensile Steel Passenger-Car Structure of Welded and Riveted Construction Designed by the American Car and Foundry Company—Center Sills Are Carbon Steel

Note—This is an abstract of a paper presented before the meeting of the Southern and Southwestern Railway Club held at Atlanta, Ga., on September 21.

RUNNING a railroad these days—particularly the management's part—is a task that tries men's souls. The "sweaty" part of the job now is that of operation, getting the trains through. Soon the blood, sweat and tears part of the job will be over, but a considerable percentage of your business may also be over. Your burden, in this event, is not removed if you expect to retain and improve your share of the transportation business. The character of your burden is changed, however. The dire threat of the consequences of not meeting shipping dates is over, but the question of retaining and acquiring transportation business confronts you as it never has in the past. Therefore, railroad management, which has shown magnificent performance, must turn its talents to channels other than those of operations only. Railroads must become merchants.

Passenger Service

We all know that the railroad companies can obtain attractive equipment if they desire; the equipment companies stand ready to furnish this equipment. The particularly difficult part which I am going to stress is that of attracting the public to the establishment. A merchant does this largely through advertising. Advertising is an art requiring specialists who know their business. It is my experience that the railroads do not take full advantage of this phase of merchandising. So many attractive features can be advertised which I think will have a strong appeal in the postwar period. To cite a few of the features which can be stressed in advertising, and which in my opinion will attract the public, please observe the following:

Riding in railroad trains is the safest means of transportation. Railroads have excellent safety records.

Another feature is that of comfort. Here is a condition of train travel that should be an advertising man's dream. To add to mental comfort is that feeling of certainty of arrival at destination, come rain, snow, sleet or zero weather. What other means of transportation is so independent of the elements?

Merchandising the Freight Service

Convenience is another advantage that can be covered in advertising. Most travelers have luggage; future trains will have luggage lockers and probably even checking systems whereby the passenger is relieved not only of the handling but also concern as to its safe keeping. Future trains will have all the conveniences of a home in that they will be equipped to function like a home or a hotel.

This is the glamour side of railroading. The more prosaic side and the major source of revenue on most

railroads is freight traffic. Railroads probably make a more energetic effort to attract freight to their lines than they do to attract passenger traffic. However, here again I believe the problem of merchandising is just as vital as in the case of passenger traffic.

I have been told that the publicity as a result of placing a named, modern streamlined passenger train in operation contributed in no small measure to an increase in freight traffic. If such a result can be obtained indirectly from passenger train publicity, is it not reasonable to expect greater results by direct methods? Suppose, for instance, a railroad obtained a complete lightweight freight train, of modern design, set up a fast schedule between two important terminals, gave the train a catchy name, and then advertised it extensively throughout the area it served.

In the postwar period merchandise shipments will undoubtedly increase in volume. This opinion is further endorsed by the probable heavy demands for domestic goods. That is, for several years of the postwar period, the lag necessitated by curtailment of the manufacture of such goods will cause a large volume of their production, most of which will require movement of one kind or another.

Passenger-Car Designs for the Future

Naturally, the truck and, to some extent, the airplane are going to make every effort to retain and increase their volume of this business. The railroads have a good argument in that they can transport at less expense to the shipper. This argument is not enough by itself and a plan for merchandising their wares, which in this case is transportation, should be formulated. Here, again, the car builder is ready and willing to furnish the equipment on demand by the railroads. As in the case of passenger cars, we are not only willing to build the equipment but also to design it to meet postwar conditions.

The American Car and Foundry Company does not recommend one material to the exclusion of others in structural materials for cars. We realize that conditions prevailing on one railroad may be such that extreme light weight and glamour in appearance and appointments are not essential or even desirable. For such railroads we have a modern design of riveted carbon-steel car that weighs approximately 126,000 lb.

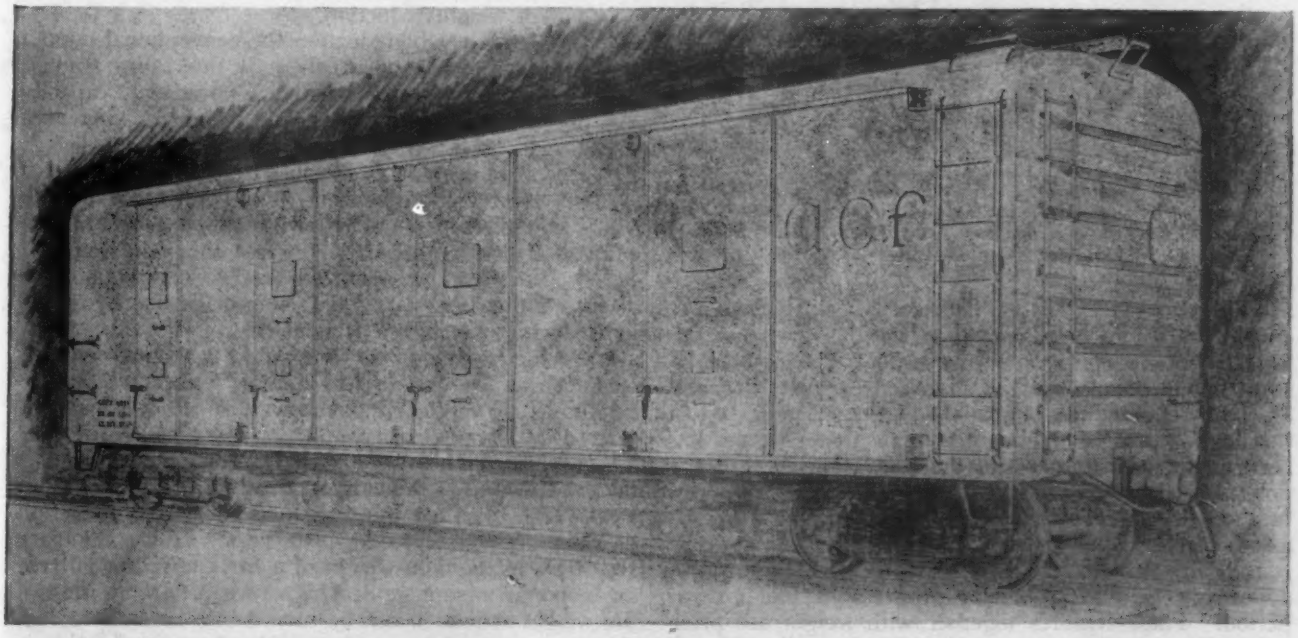
As far back as 1934 we designed and built cars of spot-welded construction, using low-alloy, high-tensile steels. The sides and roof were of spot-welded construction and the final assembly was accomplished by concealed rivets. Thus the outer surface of the shell presents a smooth appearance. The Rebels, running on the Gulf, Mobile & Ohio are of this construction. Many cars of this type have been built since the Rebels. A car of equal dimensions and with similar specialties as the carbon-steel car just mentioned, weighs in the neighborhood of 113,000 lb.

Two Modifications in Design

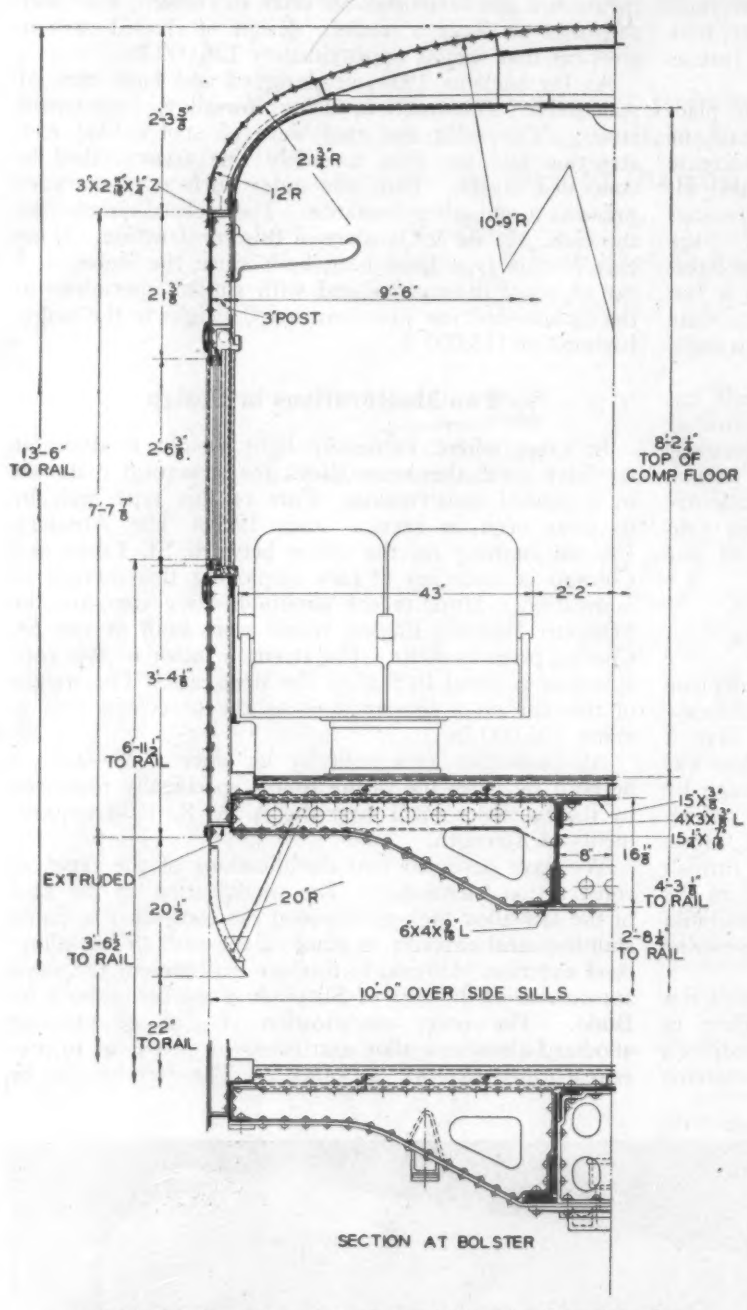
In cases where extremely light weight is desirable we have used aluminum alloys for structural materials in a riveted construction. Cars of this type built by us have been in service since 1935. The Abraham Lincoln running on the Alton between St. Louis and Chicago is made up of cars employing this method of fabrication. More recent aluminum-alloy cars are the Missouri Pacific's Eagles, which were built at our St. Charles plant in 1940. The strength factor of this construction is equal to that of the steel cars. The weight of this car on a similar basis as the preceding cars is about 105,000 lb.

All passenger cars built by us since 1938—and to be built by us in the future unless specifically restricted by the customer—will meet the A. A. R. 1938 requirements for strength.

We have designed two modifications of the types of construction mentioned. The modification in the case of the low-alloy high-tensile-steel car consists of a fluted stainless-steel exterior in place of the smooth low-alloy-steel exterior. Obviously this car will present the same appearance as the cars of Shotweld construction built by Budd. The other modification is that of utilizing anodized aluminum-alloy extrusions formed so as to present a fluted exterior appearance. The exterior can be



A Suggestion for an L.C.L. Merchandise Box Car



A Cross-Section of an Aluminum-Alloy Car Structure Designed by the American Car and Foundry Company—Bolsters and End Sills Are of Low-Alloy High-Tensile Steel—Buffer and Bolster Center Fillers Are Cast Steel

a polished surface, or the flat panels painted and the curved extrusions bright metal surfaces.

It is apparent from the above that development of construction details was far advanced previous to Pearl Harbor. It is in the refinement of these details and in the development of welding technique that progress has been made since the start of the war. This progress is not confined entirely to the drafting board but continued in shop development work to the extent that materials are available.

It is in the realm of comfort, appointments and eye-appeal that we can look for progress in the postwar period. These features together with weight are probably being given more consideration by railroads and car builders today than the construction of the body shell. A few of the items under consideration today, are trucks, seats, lights, air conditioning, interior treatment, and speed. The latter is a relative term and is an individual condition with each railroad. To my mind, it is not so much a question of top speed as it is average speed between destinations. Much thought is being given to station stops, slow-downs through yards and restricted areas. After all, it is the average speed that determines the time schedules and probably many improvements can be made.

I look for a more drastic change in freight car construction after the war than in passenger cars. This may not be an immediate change. Manifestly, freight cars must render dependable service and anything new or revolutionary must prove itself dependable. Again, the A. A. R. requires proved worth before anything receives its sanction. This I consider an essential requirement. However, in my opinion, the A. A.R. will cast approving eyes on new ideas to a greater extent than has been their practice in the past.

Studies being made at the present time have these primary considerations: weight reduction, construction by welding, protection to lading, and high speed trucks.

A substantial reduction in weight of freight cars has presented a handicap in its promotion due to the requirements of braking. While the air-brake companies have been prepared to furnish empty-and-load brake with cars of low light weight, its cost per car in comparison with the AB brake has been a serious obstacle. This question has been under consideration by the air-brake companies and I understand that in the post-war period they will be prepared to furnish what is called a load compensating brake, more efficient than the empty-and-load brake and at less cost. Accepting this as a commercial fact, the designer can "go to town" in reduction of weight of freight cars and thus give the railroads the full economical advantage of weight reduction.

In weight reduction the conventional hopper car presents one of the most interesting studies. Here is a car that is always loaded to capacity and any reduction in light weight is a potential increased revenue factor.

In fact, it is possible to haul 50 tons of a commodity like coal in a hopper car on 40-ton trucks. The reduction in cost of the trucks will partially offset the increased cost for the compensating brakes. It is a much discussed question as to the amount of money saved by reducing weight of freight cars. Probably as an average figure—and it can only be an estimated average inasmuch as the cost of hauling cars must be based on conditions prevailing n the individual road being considered—a saving of one mill per ton-mile will do for the purpose of illustrating rather crudely the economics involved in weight reduction. If we accept 15,000 miles as a yearly average mileage, then every ton reduction in weight amounts to $15 per year. If we can save 10,000 lb. in the light weight of a car, the railroads have an economic advantage of $75 per year. In addition, if the weight reduction can be turned into revenue lading, this is an appreciable amount. But here, again, this is a matter for each individual road to compute.

We have three materials which have been utilized in modern design of the hopper car; namely, carbon steels, alloy steels and aluminum alloys. The differential in price of the low-alloy high-tensile steels above the carbon steels is well known. Aluminum alloys are much more costly but it is entirely possible that in the postwar period even this material will be sold at a price which will make it attractive to some railroads for use in their freight cars.

Everyone is familiar with present designs of carbon-steel and alloy-steel hopper cars. Roughly, a 50-ton A. A. R. hopper car with the generally accepted specialties, weighs approximately 42,000 lb. Alloy-steel hopper cars with similar dimensions and specialties have been built weighing from 32,000 to 38,000 lb. Within certain limitations, the extreme reduction in weight, or, in other words, the last few thousand pounds, are generally costly. When you approach 30,000 lb. by using any of the alloy steels you will find also the use of alloy-steel castings and in some cases hollow axles. Whether or not the use of these more expensive items is economical is, again, a matter for individual decision and no general statements can be made.

We are now building an open-top 70-ton triple hopper car utilizing aluminum alloys in the entire body except center sills and body bolsters. This car will weigh 38,000 lb. and thus have a capacity of 86 tons of revenue load.

Most of the above statements can also be applied to the covered hopper car and the gondola car. I look for more extended use of the covered hopper car as it is a useful container for shipping bulk commodities.

Merchandise Trains

I previously mentioned a light weight named freight train running on a fast schedule. This idea has been given a trial, but not with special equipment designed for the purpose. It was not publicized to any extent either. Whether or not the ventures were successful I do not know. I do believe merchandise trains of this nature, with satisfactory motor highway-truck hook-ups, will be the popular and profitable means of merchandise transportation in the future.

The term "merchandise" as used here is meant to include those commodities which enjoy relatively high freight rates. Shipments will probably be largely l.c.l. with a small percentage in complete car loads. Therefore, cars making up a merchandise train may consist of box cars, container cars, flats, gondolas and refrigerator cars. One of the ideas is that this train will travel at fairly high speed and in a good many cases provide overnight service between destinations. Such cars must be provided with high-speed trucks and be so balanced that the increased speed will not result in any damage to the lading.

As an average lading of merchandise, particularly l.c.l. shipments, is very low in weight compared to the capacity of the car, such cars could be of only 30 tons' capacity. To expedite the loading and unloading either at terminals or way stations, cars could be equipped with several side doors instead of one, these doors probably of the flush type with some reduction in their width. The illustration gives an idea of its general appearance.

Also for such shipments the container car will be given more consideration by the railroads in the post-war period. Its usefulness in l.c.l. shipments has been proved and it is entirely practical to design containers capable of holding any commodity not above their capacity in dimension and weight. These containers for bulk shipments of cement, lime, etc., merchandise such as clothing, shoes, food stuffs, and also commodities requiring refrigeration or even l.c.l. tanks for liquid commodities, are entirely feasible for shipments in cars. The cars proper can be so dimensioned that containers for use with different types of shipments can be mounted thereon and set off along the line to meet shipper demands.

Greater strides will be made in the design of freight cars, I believe, than has been the case in prewar days. Not only will we have a greater selection of materials but the type of construction will veer to welding from our conventional method of riveting. The war has brought out techniques of welding that safeguard its dependability. Just before the war we were feeling our way in welded freight-car construction and at that time were more concerned with design than with shop fabrication and shop techniques. The latter have been brought to a high state of perfection through the necessity of utilizing welding in the fabrication of weapons for war. Industry has not made all developments of the welding art public information owing to requirements of military secrecy, but it will all come out in the light after the war.

Railroading Much Safer Now Than in World War I

RAILROAD passengers were three times and employees twice as safe in 1943 as they were in 1918, H. A. Daake, chairman of the Steam Railroad section of the National Safety Council and supervisor of safety of the Erie, pointed out to a meeting of that section in Chicago on October 3-5. He said in part:

"The peak of railroad traffic of World War I was in 1918 with its 43 billion passenger-miles and 409 billion ton-miles of transportation service. Last year, there were 88 billion passenger-miles and 730 billion ton-miles of transportation service, or 100 per cent more passenger service and 80 per cent more freight service than in 1918. Yet in 1918, 471 passengers were killed and 3,419 railroad men lost their lives while on duty. In 1943, 278 passengers died in railroad accidents and 1,072 railroad men lost their lives by accidental means while on duty.

"Thus it may be seen that railroad passengers were three times as safe in 1943 as they were in 1918 and railroad men twice as safe. The greatness of this achievement in which we have all participated can be appreciated in part by the volume of traffic handled every day by the American railroads. In 1943, there was a daily average of 2,500,000 passengers who traveled a distance of 100 miles. There was an average movement of 4,000,000 tons of freight an average distance of 500 miles. Perhaps this great volume of traffic and its tremendous exposure hazard will never be reached again in our time.

"The demands of our armed forces and other war conditions have placed a heavy burden on all railroad operating officers and although there have been several disastrous train accidents since our last meeting a year ago, we are well aware that the fatalities to passengers and to railroad men would be far greater were it not for the intensive safety training by railroad officers and others in supervisory positions who have this responsibility. Thousands of new employees who never worked on a railroad before, many of them high school students, have generally done their work in a commendable manner because they were trained and properly supervised."

Sessions of the Steam Railroad section were held each afternoon and the program consisted of brief remarks by individuals, the showing of sound slide films and motion pictures and panel discussions. Officers elected for the ensuing year are: General chairman, George W. Elste, Jr., superintendent of safety of the Baltimore & Ohio;

vice-chairman, L. E. Hoffman, inspector of operations of the St. Louis-Southwestern; and secretary and news letter editor, A. B. Montville, safety and fire prevention agent of the New York, Chicago & St. Louis.

An injury to a railroad employee should be regarded as seriously as a head-on collision, W. A. Johnston, general manager of the Illinois Central, contended. The stress of wartime does not justify any tendency to shrug off an unfavorable trend in personal injury records, Mr. Johnston told his audience in urging a relentless campaign against accidents. Continuing, he said:

"Some contend that wartime conditions have brought about such problems as inferior equipment, material and tools; increased business resulting in greater exposure to personal injuries; and loss of experienced personnel and replacement of this loss with 'greenhorns', some of whom do not meet pre-war physical and mental requirements.

"Granting that all or part of these explanations have a definite bearing on the increased number of injuries, it does not follow that these problems are insurmountable. Such an attitude is not in keeping with the traditions that have made the American railroads such an important factor in the progress and achievements of this nation in peace or at war. Rather, these obstacles present a challenge to the 'know how' and interests of every railroader, from the president on down to the call boy, to overcome the new personal injury hazards with the same zeal and bull-doggedness that has licked other wartime operating and maintenance problems. Incidentally, some of you here present may have at times felt, in identifying the high and low of the railroad organization, that it should be expressed from the president on down to the lowly safety man.

"Safety education should not be limited only to the 'greenhorns' but should extend to the old heads as well. To make any progress in this field we must not only know the hazards of all operations on the railroads, but also the methods by which the work can be done safely. Too often an educational program consists of a hodge-podge of rules and slogans which have some general value in selling safety, but does not specifically instruct the worker what to do or what not to do to perform his job safely. The goal of an educational program must be not only to awaken and retain the employee's interest in safety, but it must put a finger on definite and concrete ways by which he should carry out his job in an injury-free manner. This means that each job should be analyzed, so that the types of injury connected with his work can be explained to each employee, and instructions given him on how the job can be done safely."

Other subjects considered were: Grade Crossing Accidents by W. J. Flannigan, superintendent of safety of the Northern Pacific; Trespasser Accidents by G. W. Elste, superintendent of safety of the Baltimore & Ohio; and the Training of Employees by Hugh A. McAllister, assistant to the president of the Erie. The subjects of the panel discussions were maintenance of way and station accidents, maintenance of equipment and stores accidents, and train service accidents.

* * *

Photo courtesy C. N. R.

How Is This for a Record?

When the special section of "The Montrealer" pulled into the Canadian National's Central station, on the recent visit of 286 delegates of 44 United Nations for the UNRRA conference, in Montreal, a force of 30 redcaps immediately got busy with the baggage. Only 18 minutes was required for the visitors, followed by some 738 pieces of luggage, to greet local governmental representatives, speak briefly with some of the press, and then, with their respective impedimenta, clear the station, and be assigned to waiting limousines and buses and directed to their various hotels

Santa Fe Improves

(*Continued from page 583*)

capacity of 1,035 cars were constructed, these being provided largely for the purpose of handling eastbound trains and thereby freeing the main yard at San Bernardino for the handling of westbound traffic exclusively. The work in this vicinity also included the provision of a new connecting track between the "pre-cooler" yard and the main yard at San Bernardino, and the shifting of the double-track main line between these points.

The most westerly of the yards to be affected by the improvement program is the Hobart yard south of Los Angeles, which handles trains to and from the main line to the east as well as the line to San Diego. The work here included the construction of seven new tracks for receiving and departure purposes, which have an average capacity of 90 cars and a total capacity of 630 cars.

[Part II of this article will appear in a subsequent issue.]

New Book . . .

Universal Directory of Railway Officials and Railway Year Book, 1944-1945, compiled from official sources under the direction of the editor of the "Railway Gazette." 582 pages. 8½ in. by 5½ in. Bound in cloth. Published by the Directory Publishing Company Limited, 33 Tothill Street, Westminster S.W.1, London, England. Price 20 shillings (approx. $4).

With this edition, this well-known reference book reaches its Golden Jubilee, or 50th year of publication. In format it is similar to previous editions. The preface states that ". . . the present edition should prove at least as valuable as its predecessors in containing within the scope of 500 carefully-condensed pages more comprehensive lists of officers and particulars of railways throughout the world than can be obtained from any other publication in any language. . . . The section relating to statistical and other information has been subjected to the same extensive revision as the remainder of the volume."

The first section is devoted to individual railways throughout the world. The names, titles and addresses of officials are listed as well as particulars of mileage, equipment and financial results. The second section covers statistical and other information, and includes data on the development of the world's railway mileage, principal gages in use, fast train runs, and typical loading gages; also short articles on locomotive and car development, and rather extensive statistics on British railways. The usual chronology of railway history and railway bibliography are included, as are the three indexes—countries, general and personal.

Railroads-in-War News

Bars Relief Service for Florida Tourists

Stranded vacationists will have selves to blame, says Col. Johnson

The Office of Defense Transportation "will under no circumstances" provide relief trains for this winter's Florida tourists, and vacationists who find themselves stranded at southern resorts "will have only themselves to blame," Director J. Monroe Johnson of the Office of Defense Transportation warned in an October 12 statement. Last season, O. D. T. authorized the operation of additional daily coach services from Florida to New York for a 30-day period beginning March 1, 1944.

No Help from O. D. T.—This season, as Colonel Johnson put it, "pleasure travelers who fail to heed this warning will have to make their way northward as best they can and with no aid from this office." The O.D.T. director also warned travel agents and resort proprietors to refrain from advertising or implying that they are in a position to guarantee return transportation. In this connection he pointed out that "not even the railroads or the intercity bus lines are able to make such a guarantee," adding that railroads serving southern resorts are informing their patrons that purchase of a round-trip ticket does not assure return space within any specified period of time.

"American transportation," Colonel Johnson said, "still is busily engaged in helping win two wars and there is no space or equipment available for civilian travelers not actively engaged in the war effort. While the transportation situation remains tight all over the country, it is extremely critical on those routes serving the southern areas on both the Atlantic and Pacific coasts.

Will Risk Being Stranded—"Trains, for example, have been running at more than capacity during the entire summer. Probably 75 per cent of all passengers are members of the armed forces, most of the remainder being civilians traveling on essential business connected with the war. It is obvious that with trains crowded beyond normal capacity with such essential travelers there is no room for the pleasure or non-essential traveler. Pleasure travelers who insist on forcing their way onto southbound trains not only do so at the risk of dislodging military and other essential travelers, but also stand an excellent chance of being stranded for considerable periods of time when attempting to make a return trip north."

Colonel Johnson conceded that the rate of increase in passenger traffic has slowed down to some extent, but he stressed the fact that the volume is still more than 14 per cent above last year. Much of the increase, he added, is caused by the continued high level of organized military travel, while furlough travel has increased greatly and the transporting of military casualties is constantly increasing. Also, the O. D. T. director reiterated his previously-expressed view that the overcrowding of transportation facilities will not materially decrease with the end of hostilities with Germany. "I do not look for any real solution to the problem until after the fall of Tokyo."

A-Priority for Manpower Is Given Western Roads

Acting to "speed the interregional recruitment of 974 switchmen, 1,030 brakemen, and 329 firemen," the National Manpower Priorities Committee this week authorized a national A-priority rating to meet manpower requirements of 13 railroads serving the west coast. The joint announcement from the Office of Defense Transportation and War Manpower Commission said this list of train service employees was in accordance with the railroads' expressed needs; and "workers are needed immediately."

The announcement also quoted "O. D. T. officials" as saying that the shortage of switchmen, firemen, and brakemen on the west coast had become "increasingly serious within the last six weeks," this being "especially true" in the San Francisco Bay area, "where O. D. T. recently announced that the shortage was congesting freight yards and sidings and was slowing up the movement of war freight." On the whole west coast, the reports also showed, "350 to 400 switchmen are working double shifts daily."

Johnson Succeeds Talmage

George E. Talmage, Jr., assistant director in charge of export and import traffic of the Division of Traffic Movement, Office of Defense Transportation, has resigned to accept a position with Higgins Industries. He has been succeeded at O. D. T. by A. S. Johnson, his assistant there.

Mr. Talmage, a former director of the Interstate Commerce Commission's Bureau of Water Carriers and Freight Forwarders, came to O. D. T. in June, 1943, from the War Shipping Administration. Mr. Johnson came in April, 1942, from the Department of Agriculture where he had been director of the Transportation Division since 1939. Prior to then Mr. Johnson had been in railroad service with Pacific Electric.

Says Rail Men Will Not Yield Seniority

Will guard it with their lives even against veterans, Robertson insists

"There is not a railroad worker in wartime or peacetime service who would not guard with his life his seniority right. He would sacrifice much to protect that right for himself as well as for his brother." Thus did David B. Robertson, president of the Brotherhood of Locomotive Firemen & Enginemen, express himself October 10 in a New York Times Hall public discussion based on the theme "Labor and the Veteran."

Disagrees with Selective Service—The occasion of the brotherhood leader's outburst was, he said, a "serious conflict" that has developed between the unions and the Selective Service authorities over the proper interpretation of provisions of the law dealing with rehiring veterans released by the armed services. The view of the administration, the speaker said, is that "a returning veteran gets his job even if this means discharging a non-veteran with more seniority."

Disputing this application of the law, Mr. Robertson declared: "The law does not, of itself, give superseniority to veterans although it does protect them against loss of seniority. It is inconceivable to me that any authority of government could place an interpretation upon an act of Congress to conflict with the intent of labor laws already enacted, and by which the seniority rights of workers are protected. The seniority right has been established by legal decision as a vested property right of the worker. It is fully recognized by management. Railway labor won this right more than half a century ago."

The speaker went on to explain that "The practical men of the industry—both management and labor—(and from my own experience I know they are highly practical) are giving great and special consideration to every phase of the veteran problem. Not only are they fitting disabled men into jobs, but they will protect the skills of the non-veteran workers. They ordinarily have done this, and it would certainly be bad business if they do not do so."

Situation "Well in Hand"—In the railroad industry, the brotherhood spokesman observed, labor and management have the problems arising out of the return of veterans to their former employment "well in hand." Under the Railway Labor Act, "under which we operate quite satisfactorily, provided its administration is not

interfered with," he said, "we know the rights and interests of our men, and management respects those rights and interests."

Developing his interpretation of the seniority provisions of the statute further, Mr. Robertson went on to say:

"Knowing railroad men as I do, I do not hesitate to say that those who are serving in the armed forces do not expect to be given superseniority. The interpretation appears to me to be wrong and in complete conflict with the law. I am sure its legality is doubtful. It must be understood that seniority is the cornerstone of railroad labor. It is routine on railroads, as wide precedents over long years of railroad practice make the problem relatively simple.

"Every railroad worker in war service knows where he will be fitted in when he comes back. He knows that management and labor join hands with the utmost sympathy, care and understanding, in accounting to him for a job. A substantial number of those being currently discharged from the armed forces are disabled. Those who come back to the rails, I know, are being treated well. Men are being matched to jobs."

In a discussion apart from his prepared remarks, the speaker expressed his emphatic concurrence with a comment of an American Federation of Labor representative to the effect that "government intervention has already strangled collective bargaining to death."

W. P. B. "Don't Travel" Appeal

Supporting the Office of Defense Transportation's appeal for the elimination of all non-essential travel, William Y. Elliott, the War Production Board's vice-chairman for civilian requirements, has called for more convention canceling and urged hotels to cooperate by discouraging such meetings and warning delegates that reserved rooms cannot be guaranteed if the accommodations are needed by important military and civilian travelers serving the war effort.

Dr. Elliott's statement of October 9 pointed out how transportation facilities "continue to be strained to the utmost," while hotel facilities "are completely unequal to the task thrust upon them in some of our most important war production and port cities."

Thus the suggestion that organizations contemplating conventions within the next six months "should reconsider, and if possible defer their meeting, or restrict attendance."

I. C. C. Service Orders

To reduce undue delays in unloading and loading box cars, the Interstate Commerce Commission has issued Service Order No. 242, which is effective October 19 and expires November 19, providing that after the expiration of tariff free time the demurrage charges on a box car held for loading or unloading shall be $2.20 per day or fraction for the first two days, $5.50 for the third and fourth days, and $11 for each succeeding day. The order applies to intrastate and interstate traffic and to box cars held for domestic loading or unloading or for transshipment by water, and the demurrage charges it sets up are applied in lieu of charges for storage of freight in box cars at or short of ports consigned or reconsigned for export, coastwise or intercoastal movement.

Use of refrigerator cars for the movement of wine or juice grapes was prohibited by Service Order No. 241, which was effective, however, only from October 6 to 10, inclusive. Revised Service Order No. 153, superseding the previous order of that number, effective October 7, has made that order's prohibition of peddling of wine or juice grapes from cars applicable to any type of car (instead of to refrigerator cars only), and to both intrastate and interstate traffic.

Additional routes have been specified by the commission as subject to the prohibition of Service Order No. 222, concerning the routing of carload shipments of nontransit grain, grain products, and related products, also seeds (previous items in *Railway Age* of September 30, page 524). Thus specified are a large number of available routes within the territory bounded, in general, by Cincinnati, Ohio, Louisville, Ky., Cairo, Ill., Memphis, Tenn., Kansas City, Kan., Omaha, Neb., Sioux City, Iowa, Minneapolis, Minn., Duluth, Minn., Milwaukee, Wis., and Chicago.

Service Order No. 84, requiring the Coudersport & Port Alleghany to reroute traffic because of flood conditions, has been vacated by No. 84-A, effective October 23.

Service Order No. 243, effective October 16, forbids the light-weighing on railroad track scales of tank cars, except those which do not have stenciled on them a legible tare weight. The order set forth that the light-weighing has been impeding the movement of such cars. Service Order No. 244, effective October 11, prescribes regulations for the "equitable distribution" of grain cars among shippers in Minnesota, Montana, North Dakota, South Dakota, and Wisconsin, where the demand is placing "an inordinate burden on the car supply."

New Restrictions on Tank Cars to East and Pacific Coast

Special Direction ODT 7, Revised 3, issued by the Office of Defense Transportation on October 10, established as of that date a permit system for the use of tank cars of less than 7,000 gallons capacity for rail shipments of petroleum products into District No. 1 (the Atlantic seaboard area), and for all liquid products to the states of California, Oregon and Washington. So far as the Eastern seaboard is concerned, the new order is a restoration of a similar order formerly in effect.

"The direction affecting the west coast is necessary in order to relieve the congested west coast terminals, and to move a maximum quantity of products with a minimum number of tank cars," said Fayette B. Dow, director of O. D. T.'s Department of Liquid Transport. "It is obvious that the use of larger cars will mean greater volume per carload and per trainload, and less handling, which are desirable objectives in view of the increased war traffic to the west coast and the existing shortage of railroad labor in that region."

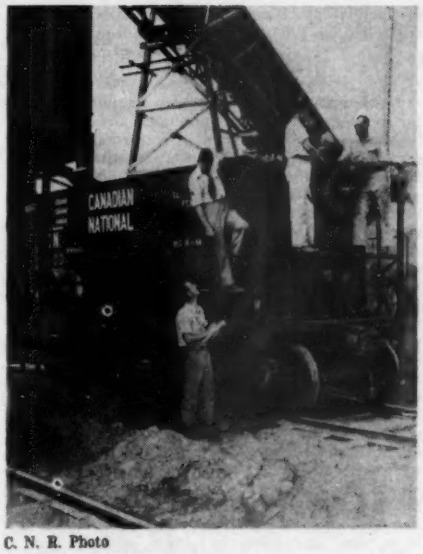
C. N. R. Hauls First Ore Train Over New Spur Line

The first shipment of iron ore from Steep Rock Iron Mines, Ltd., located at Steep Rock Lake, a few miles north of Atikokan, Ont., and about 150 miles southwest of Port Arthur, moved over the new spur

• • •

Southern Railway (England) Photo

Colonel Norman A. Ryan, Assistant Chief of Transportation, U. S. Army, Officially Opened the Joint British-U. S. Railway Photographic Show in London, September 1. The Exhibition, Which Illustrated Peacetime and Wartime Operating Conditions of Both Nations, Is Now "On Tour" of Towns Along the Southern's Lines, Chiefly to Points Where Americans Will Have Opportunity to View It.



C. N. R. Photo

Mine Officials Checking the Load on the First Shipment of Iron Ore to Leave Steep Rock Lake. The C. N. R. Built 250 New All-Steel Ore Cars of 50 Tons' Capacity to Handle the Traffic

line of the Canadian National last week, on its way to a smelting plant in Cleveland. Twenty-seven cars were required to handle the shipment of 1400 tons.

Present plans call for one trainload daily, but as soon as conditions permit, production will be doubled. It is estimated 5,000,000 tons yearly will be the output under full production.

The Canadian government, interested in the development as a priority war project, authorized the building of the spur line into the property, as well as a modern ore-loading dock, now under construction at Port Arthur.

The development, first estimated to require three years for completion, was speeded up because of the urgent need for high-grade ore for war plants, and was finished in half of that time. The ore is being taken from the bottom of the 15-mile lake. Because of its inaccessibility, the water of two lakes had first to be diverted, the course of another reversed. Parts of Steep Rock lake then were drained of 72 billion gallons of water. Specially-designed equipment was needed to bring the ore from the lake to the railway cars, and 23 miles of road was built to reach the various diversion projects and an 8,000-ft. haul road on the drained portions of the lake.

O. D. T. Closes 7 Eastern Offices in Curtailment Move

Because of generally satisfactory transportation conditions at present in the east, there has been some curtailment in O. D. T. operations, Alfred R. Pelnar, eastern director of the Railway department, explained in announcing the closing of the Boston, Philadelphia, Pittsburgh, Cleveland, Columbus, Cincinnati and Detroit railway department offices, of the Office of Defense Transportation.

Philadelphia, Pittsburgh, Columbus and Detroit merchandise offices closed October 15, following the closing two weeks earlier of the Boston, Cleveland and Cincinnati branches. Merchandising and rail transportation matters formerly handled at these points will be handled by the district office in New York. On October 15, the position of transportation assistant in the district port director's office was discontinued. The district port director's office in Boston is to be closed November 1.

Mr. Pelnar disclosed that export traffic in the eastern district is now about at maximum, and all ports—Boston, New York, Philadelphia and Baltimore will operate at maximum through this month.

Former Railroaders Receive Promotions in M. R. S.

Among recent promotions announced by Brig. Gen. Carl R. Gray, Jr., director general, Military Railway Service, are those of two former railroaders. 1st Lt. James T. Dutcher, New York Central employee at Greenwich, N. Y., has won his captaincy and 2nd Lt. John B. Smythe, of Marion, Ohio, formerly a draftsman with the Pennsylvania, has been promoted to 1st lieutenant.

Materials and Prices

The following is a digest of orders and notices that have been issued by the War Production Board and the Office of Price Administration since September 23, and which are of interest to railways:

Batteries—The use of Form WPB-547 (formerly PD-1-X) for the assignment of preference ratings on dry cell batteries will be discontinued October 1. This applies to all types of dry cell batteries used by civilians: No. 6, flashlight, railroad lantern, and radio batteries.

Boilers—Because of a decrease in military demands for steel boilers, a majority of these manufacturers will no longer be required to report their proposed shipping schedules to the W. P. B. Only those producers who are still primarily engaged in filling military orders will be requested to schedule their deliveries.

Brooms—Total requirements for brooms for 1945, are estimated as 58,800,000; including Army and Navy requirements of 10,800,000; civilian requirements, 40,000,000; industrial requirements, including railroads, 8,000,000. Termination of the war in Europe will mean little, if any, cutbacks in military requirements. This year's boom corn crop, estimated by the Department of Agriculture to be 63,000 tons, is not excessive and no carry-over is expected. Production has averaged 41,000 tons a year, with a normal carry-over of 10,000 tons. However, last year's crop was only 32,000 tons and the normal 10,000-ton carry-over had to be used to meet this year's increased demands. This resulted in depleted inventories and dealers' stocks of brooms being sold out entirely before the current crop of broom corn started coming in, the Broom Manufacturers Industry Advisory Committee declared. Committee members said they believed that the shortage of household brooms is growing acute and that with increased military and industrial demands, the industry again will be out of the current crop of broom corn before the 1945 crop is ready.

Carbon Brushes — Authorization has been granted to the National Bureau of Standards, by the W. P. B. to proceed with a voluntary simplification program for carbon brush terminals. A final draft of the proposed plan will be ready soon for presentation to the industry and the technical problems have been worked out with the industry and manufacturers primarily concerned. No decrease in the requirements for carbon brushes for use in batteries and motors for the armed services is foreseen for the fourth quarter of 1944 and the first quarter of 1945. Air Forces requirements in certain programs have not reached their peak requirements for the Signal Corps will show a slight increase for the fourth quarter of 1944 and the first of 1945, and no decrease in carbon brush requirements for the Navy is foreseen, because of the constant need of motors and controls for replacement and equipment for advance bases.

Construction Machinery—Order L-196, which controlled the sale of certain critical types of used construction machinery and required distributors and contractors owning shovels, cranes, draglines, motor graders and track-laying tractors to register their equipment in W. P. B. regional offices, to report change of status of the equipment, and to obtain W. P. B. approval of sales, has been revoked. Reasons for revoking the order are summarized by W. P. B. as follows: (1) The great majority of used cranes, shovels, motor-graders and track-laying tractors in good condition are busy. (2) Contractors now want new machinery, not used items, and (3) Most users of construction machinery have adjusted themselves to war-time conditions. They are getting along, with the equipment they own, by keeping it in repair, and are themselves taking advantage of opportunities to buy used equipment. There is also considerable evidence that many of them prefer to wait and buy new machinery after the termination of the war in Europe instead of buying used equipment now.

Electric Lamps—Limitation Order L-28, issued January 24, 1942, to control the production of incandescent, fluorescent and other electric discharge lamps, had been revoked, but L-28-a, containing specifications for the 1,800 permitted types of incandescent, fluorescent and other electric discharge types, remains in effect. Revocation is not expected to increase production since W. P. B. will allocate tungsten, nickel, molybdenum and copper in approximately the same quantities as previously. The 33 manufacturers in the industry are now operating at more than twice the 1940 production rate, and production of electric lamps and bulbs for illumination purposes in the second quarter of 1944, totaled $38,572,000, an increase of 3.8 per cent over the $37,268,000 volume in the preceding quarter and 21.1 per cent over the $31,846,000 total for the second quarter of 1943.

Electric Motors — Maintenance of present W. P. B. controls on commercial-type motors, even after victory in Europe is assured, in order to distribute properly the supply among all companies manufacturing civilian items, was recommended at a recent meeting of the Fractional Horsepower Motor Labor Advisory Committee. Unfilled orders for commercial-type AC motors amount to 10.3 months at current production level. All requirements for military-type motors are being met at present despite the over-all motor backlog of 8.6 months at current production levels. Commercial-type AC motor production is expected to increase 90 per cent from four to nine months after "V-E" Day, Government officials declared.

Fire Extinguishers—The short supply of copper makes it unlikely that applications for the manufacture of soda acid fire extinguishers will be approved through the W. P. B.'s "spot authorization" procedure. Copper is the only known metal that can be used in making soda acid fire extinguishers. Before the war, 2,000,000 lb. of copper and its alloys were used annually in their manufacture.

Glycerine—A carload lot of glycerine will be regarded as such only if it has a weight of 36,000 lb. or more net, the O. P. A. announced today in Amendment 1 to MPR 38, effective October 10.

Industrial Power Trucks—General Limitation Order L-112-A, governing industrial power truck models approved for manufacture, has been amended to permit a limited number of additional models to be made, primarily to allow users to duplicate models already in service and thereby simplify the repair parts problem, W. P. B. said. Eleven of the 39 manufacturers on the approved list now may make additional models under the amendment. Other manufacturers either did not request permission to increase the number of models they make or their request was turned down as unnecessary or because the models involved used too many components or critical materials.

Lighting Fixtures—The Fluorescent and In-

candescent Lighting Fixtures Industry Advisory Committees, at their recent joint meeting, recommended that orders L-78 and L-212 be retained in substantially their present forms until conditions warrant their revocation. Some controls will be needed until materials, manpower and components permit increased production of lighting xtures, W. P. B. officials and industry members agreed.

Lumber—Direction 5 to P-142, issued September 28, states that the 110 per cent quota established in the order does not apply to lumber with respect to any operator who is a Class I consumer under L-335. W. P. B. explained that a Class I consumer may use the rating assigned to him in P-142, but is permitted to order and receive lumber in any quarter only to the extent authorized on Form WPB-3640.

Magnesium—All Government controls on the use of magnesium for civilian products have been removed by the revocation of Preference Order M-2-b. Simultaneously W. P. B. issued Order M-2-c, which provides that all restrictions on the use of magnesium contained in other W. P. B. orders no longer apply. However, restrictions in other orders as to the quantity of an article that may be made or as to its size or type remain applicable even if the article is made wholly or partly of magnesium.

Metal Sash—Metal storm windows may be made of aluminum or magnesium, or from other metals provided the materials are obtained from idle or excess inventories according to an amendment to Order L-77. Formerly, metal storm windows could be made only from material put in process before April 3, 1943. W. P. B. officials pointed out that restrictions on the manufacture of metal windows remain unchanged. They may be made only (1) to fill purchase orders from the Army, Navy, Maritime Commission or war shipping Administration when required by specifications, or (2) to fill orders with preference ratings of AA-5 or better.

Metallic Conduit—Restrictions on the installation of electrical conduit, electrical metallic tubing and raceways have been removed from Order L-225, which has been amended. The amount of metal (by weight) that may be used in the manufacture of this equipment is still limited by L-255 on the basis of the amount used in 1941. The order also retains provisions restricting sales by manufacturers and distributors to those with preference ratings of AA-5 or better. Manufacturers are still required to make monthly reports to W. P. B. on sales and shipments.

Plywood—Distributors' stocks of softwood plywood total only 40,500,000 sq. ft. or less than a 30-day inventory, the Plywood Distributors Industry Advisory Committee was informed at its recent meeting. Allocations of softwood, plywood to distributors under Order L-150-a cannot be increased to raise this critically low level of stocks while heavy military demands on the mills continue, W. P. B. officials said. Plywood producers have a backlog of orders totaling 425,000,000 sq. ft. with production at the rate of 125,000,000 sq. ft. per month.

Portable Conveyors—Order 287, restricting production of portable conveyors has been revoked and the General Industrial Equipment Order L-123 has been amended to include portable conveyors.

Refrigerants—Use of substitute refrigerants, such as methyl chloride, sulphur dioxide and ammonia, to take the place of Freon-12 must be continued until the Freon situation improves, according to an amendment to Conservation Order M-28. It had been expected that the use of substitutes in refrigerants and the restrictions on the use of Freon-12 in air conditioning would be discontinued on September 30, but an unexpected shortage of anhydrous hydrofluoric acid, a component of Freon-12, has made this impossible, W. P. B. officials said.

Service Equipment—Any piece of building service equipment authorized or rated by the W. P. B. on a special application form, or any piece of processing or service machinery or equipment whether or not specifically approved, may now be installed in an existing building without permission under L-41, regardless of cost limits, according to amendments to L-41 and to Direction 2 of the same order.

Direction 2, as amended, provides that it is not necessary to get W. P. B. permission under L-41 to install or relocate in an existing building any piece of processing or service machinery or equipment, regardless of the total cost of the job. The direction also permits the installation of building service equipment, such as plumbing, heating, lighting, air-conditioning equipment, elevators or escalators, regardless of the total cost of the job, if the equipment has been authorized or rated on a W. P. B. special application form.

In addition, building alterations required in connection with the installation may be made, but no new buildings or additions to existing buildings may be constructed, W. P. B. stressed. Materials required for the installation or necessary alterations may be obtained under Direction 15 to CMPR 5, which was recently amended to give, to persons not specified on Schedule A of that regulation, preference ratings and allotment symbols for the limited acquisition of such materials.

Shellac and Ferro-Alloys—Shellac and ferro-alloys (leaving only chrome and manganese under import control in this type of metals) are among the 16 commodities removed from governmental import control through an amendment to General Imports Order M-63, effective October 1. These commodities are now in favorable supply, W. P. B. said.

Steel Bars—Continuation of L-211, Schedule 15, which standarizes production of hot-rolled carbon steel bars, was recommended at a recent meeting of the Carbon Bar and Semi-Finished Steel Industry Advisory Committee. Benefits from the schedule's restrictions were reported by one mill, indicating that a reduction of 48 odd sizes of steel resulted in a net increased production of approximately 15 per cent in two of their bar mills. Space directives on mills producing steel for further conversion should not be removed as long as current shell steel and other urgent requirements exist, committee members emphasized. Carbon steel bars and semi-finished products are still in steady demand, several members reported. Present mill loads indicate deliveries on bar mill products can be made well through the first quarter of next year, they added. Shell steel requirements remain heavily programmed, demanding considerable production space in mills able to produce the required sizes, the government presiding officer said.

Steel Products—The estimated supply of steel that will be available to the steel products industry for the fourth quarter will total 16,085,000 tons, as compared with 15,900,000 tons, the estimated supply for the third quarter, W. P. B. told the Steel Products Industry Advisory Committee at its recent meeting. The 185,000-ton increase is attributed to new facilities, which, however, are not yet operating at full capacity because of shortages of manpower. As a result of cutbacks and cancellations, 100,000 tons of carbon steel and 25,000 tons of alloy steel have been reserved for usage under PR 25, the "spot authorization" order that permits civilian production. The remainder of returned allotments will be reassigned to the O. D. T., F. E. A., W. P. B.'s O. C. R. and other agencies, W. P. B. spokesmen said. At present, booking of orders almost equals shipments, according to reports on production schedules given by committee members.

Tools—Five tool orders and two limitation order schedules have been revoked because backlogs of unfilled orders for the items involved had been reduced sufficiently so that no difficulty is anticipated in meeting future requirements. Delivery of tools and related products involved still are subject to PR 1, which provides for the filling of rated orders ahead of unrated ones. Delivery also is subject to other applicable W. P. B. regulations. The orders revoked are E-5-a (gages and precision measuring hand tools); E-7 (metal-cutting bandsaw blades and hacksaw blades); E-9 (precision measuring instruments and testing machines); E-11 (foundry equipment and electric metal melting furnaces); M-211 (heat treating equipment). The revoked schedules are Schedules 5 and 6 to Limitation Order L-216, controlling the manufacture of files and vises respectively.

Tractors—Order L-53-a, which required producers of small track-laying tractors (Class V) to obtain W. P. B. authorization before the tractors could be manufactured, was revoked by W. P. B. The revocation, however, does not remove these tractors from W. P. B. control; all sizes may be manufactured only in accordance with approved production programs, and their distribution is controlled by L-53.

Prices

Nonferrous Die Castings—In computing prices for nonferrous foundry products and die castings by means of their pricing formulas, sellers may figure their metal costs on the basis of O. P. A. ceiling prices instead of on the basis of current metal prices as formerly required by the two regulations covering these castings, according to Amendment 6 to RMPR 125 and Amendment 3 to MPR 377, effective October 12. The die casting regulation previously permitted only the seller who did his own alloying to figure his metal costs at the O. P. A. ceiling, whereas the seller who purchased his metals was required to compute his metal costs on the basis of current delivered cost. The nonferrous castings regulation made no such distinction and required all sellers to use current metal prices in computing their prices. At the time these two regulations were issued, all metals used by die casters and by the nonferrous foundry industry were generally selling at ceiling prices. Today, this is no longer true, and in view of variations in the metal market, especially the secondary merket, and present restrictions on forward buying, it is now impossible in many instances for a seller to make a casting to be produced sixty or ninety days later. The new action eliminates this risk, and affords greater stability and safety to the seller. Its effect on prices will be negligible, O. P. A. said.

Official Commodity Guide—Copies of a new official guide on commodities and services under price ceilings, with a directory of the key operating officials of the various price units in O. P. A.'s national office at Washington, D. C., is available to industry and the public generally, at a charge of $1 for each booklet. Six monthly supplements to the directory, bringing its information completely up to date, will be supplied to purchasers, without any further charge. The law permits free distribution of the booklet to O. P. A. personnel, only. Although the listing of commodities and services covers approximately 6,000 items, and includes the main commodities or groups of commodities under price control, it is not necessarily a complete list.

Poles and Piles—The appointment of two standing subcommittees to the Douglas Fir Pole and Piling Industry Advisory Committee has been announced. The first will consider the pricing of ponderosa pine poles and piling, and the second will consider the pricing of lodgepole pine poles.

Steel Scrap—The maximum molybdenum content of scrap that may be priced as segregated high and medium tungsten tool steel scrap (Types 1 and 2), formerly fixed at one per cent by specifications of the tool steel scrap regulation, has been increased to one and one-half per cent by Amendment 2 to MPR 379, effective October 7. This action, brings specifications of these two types into conformity with changes made in specifications of two corresponding types of tugsten tool steel scrap (Groups 10 and 11) by the W. P. B. in its Supplementary Order M-24-c, as amended September 6, 1944. No change is made in the specified tungsten content. O. P. A. said that the supply situation with respect to tool steel scrap has changed so much for the better that W. P. B. has removed all restrictions on the use of alloying elements in the production of tool steels, and manufacturers are now producing steels of somewhat different analysis. Types 1 and 2 are two of the five types of scrap established by the regulation, which provides different maximum prices for unsegregated scrap and for scrap segregated according to type. The dealer who segregates the scrap according to type receives a premium.

Structural and Drain Tile—Producers of structural hollow building tile and clay drain tile in seven states who were previously granted an increase of 75 cent per ton in their ceiling prices will be permitted to use the figure of 80 cents per ton in computing ceiling prices after October 7, according to Amendment 54 to Order A-1 under MPR 188. The area covered by this action includes the states of Iowa, Minnesota, Nebraska, and North and South Dakota, the upper peninsula of Michigan, and counties of Wisconsin lying north and west of and including Oconto, Shawano, Waupaca, Waushara, Green Lake, Columbia, Dane and Green.

GENERAL NEWS

Solution Offered to South's Rate Dispute

Norris suggests that parties get together to remove case from politics

While the Southern Railway is engaged —in common with other railroads and industries of the South—in publicizing the advantages which the region affords for further economic growth, "much of the good we are trying to do is being neutralized by the continuous publicity sponsored by those who have made a political football out of one of the South's greatest industrial assets—its present pattern of railroad freight rates." Such was the warning issued October 10 by E. E. Norris, president of the Southern, in an address to the Kiwanis Club of Birmingham, Ala.

South's Growth Greater Than Nation's—As recently as 1880, he reminded his audience, the ten Southeastern states "turned out a little more than a quarter of a billion dollars worth of manufactured products." By 1920 these same states were producing as much manufactured goods as the entire nation had produced in 1880. Between 1920 and 1939, the value of manufactured goods produced in these Southeastern states increased 20 per cent, "while the value of the entire nation's industrial production declined 9 per cent." During the same period, "the number of people employed in Southern industries increased 19 per cent, while the total number for the country as a whole decreased 13 per cent." The speaker further cited a finding of "a responsible officer of the United States Bureau of the Census" that "40 of the nation's 68 industrial cities having the brightest prospects for the future are in the South."

A railroad, Mr. Norris went on to explain, "represents the ultimate in faith." That is, it creates nothing tangible, and has to look for its well-being to the producing area which it serves; "a railroad must always gamble on the growth and prosperity of industry and agriculture in the territory it serves."

Railroads Depend on Area's Progress—The speaker disclaimed "expertness in the complex field of freight rates," but said he did know that these rates "have always been made to help, not to hinder, Southern industry—" to help it to gather its raw materials economically; to help it to reach its primary market (the South) to advantage; to help it to sell its products in the great consuming centers of the North and Central West; and to protect it from cut-throat competition in its own backyard."

This course has been followed by the railroads in simple recognition of "the inescapable fact that a railroad can prosper only as the section it serves prospers." With the facts as to the South's progress and the railroads' obvious concern that they continue being what they are, the speaker sees portrayal of the area by a group of politicians "as the emaciated victim of 'freight rate discrimination'" as a worthy subject for a "Believe-It-or-Not" cartoon. He continued with four other pertinent observations:

"First, if there are discriminations in the freight rate structure, the governmental machinery to correct them has always been, and always will be available—and the vocal proponents of freight rate 'equality' know this.

"Second, the shippers of the South; the interests which actually pay the freight bills, are not behind this agitation. Instead they are overwhelmingly opposed to legislative rate-making and political tinkering with the rate structure.

"Third, the whole agitation about freight rates is based on the absurd assumption that the railroads have tried to kill the goose that lays its golden eggs.

"And fourth, the few who are most vociferous in their criticism of the present freight rate structure are the very persons who should have the real interests of the South always in mind; the very persons who are best fitted by training and experience to appreciate what harmful publicity for the South means; the very persons who stand to profit most from the quiet, orderly

(*Continued on page 601*)

"Syllable-Perfect" Women

A writer to "The New York Times," in a letter giving the civilian passenger "due and sufficient cause for grumbling about service and discomfort", had at least one word of praise for the railroads:

"One thing I find, however, infinitely improved in railroad passenger operations because of the war and that is the loudspeaker announcement of trains by women. They remind me every time I hear them how atrociously sloppy and slurry the men train callers were in the old days. The clear, careful, syllable-perfect announcements at the Pennsylvania station nowadays are a cause for public satisfaction. One can only hope that the women will be kept on after the war in the name of public service and not dismissed out of any misguided sympathy for those word-swallowing bored males of yesteryear whom they succeeded in the crisis."

N. O. I. for This Year May Be $1,060 Billion

Or it may be $1,152 billion with net at $700 million I. C. C. Bureau says

Assuming a continuation of the trend which prevailed through August, the Bureau of Transport Economics and Statistics of the Interstate Commerce Commission has calculated that the 1944 net railway operating income of the Class I railroads will be about $1,060,000,000, or perhaps as high as $1,152,000,000. The results of the computations are presented in graphic form and discussed in the latest issue of the Bureau's "Monthly Comment on Transportation Statistics," which emphasizes at the same time that "these facts are given without any prediction of what the exact net income for 1944 will be."

R. R.s' Own Estimate Is Lower—If a net railway operating income of $1,152,000,000 is realized, the Bureau says that the net income after charges would be "about $700,000,000." In their recent petition for restoration of the Ex Parte 148 freight rate increases, the railroads stated that they expected the 1944 net income to be "about $650,000,000," as compared with $873,000,000 in 1943. The 1943 net railway operating income was $1,359,000,000.

The I. C. C. Bureau's ratio chart shows the accumulated revenues, expenses and net railway operating income for 1943, compared with the current year's seven-months figures. It indicates that the 1944 gross will be about $9,500,000,000; operating expenses about $6,500,000,000; and net railway operating income about $1,060,000,000. The possible increase of the latter to $1,152,000,000 is based on the Bureau's thought that the $6,500,000,000 figure "probably overstates the 1944 expenses," because of accruals for wage increase late in 1943.

Forecasts of Expenses—"If we raise the eight months' expense total in 1944 to a 12 months' total without regard to 1943 by giving effect to half the peace-time seasonal relations between the expenses of the first eight months and last four months of the year, we get $6,250 millions," the statement adds. "In short it is probable that the two expense curves [1943 and 1944] will be close together by the end of the year."

Reviewing revenues and expenses for August, the Bureau notes that while the freight revenue for that month was 5.4 per cent above that of August, 1943, the passenger revenue was "nearly the same," being up only 0.1 per cent. The percentage

increases in passenger revenue over the corresponding month in 1943 have declined gradually from the high of 26.7 per cent for February.

The Bureau's regular monthly freight revenue index, based on 1935-1939 monthly averages as 100, was 229.9 for August as compared with July's 228.5. The passenger revenue index was down to 462.7 from July's 463.1. The operating ratio for August was 64.4 as compared with 58.4 in August, 1943. The eight-months ratio was 65.9 as compared with 60.

Taxes Close to $2 Billion—Presenting an analysis of the 1943 railway tax accruals, which amounted to $1,842,246,719, the Bureau warns that the excess-profits-tax element may be misleading unless the computation of that tax is kept in mind. Of the $1,578,521,125 paid by the railroads in 1943 federal taxes, $885,359,690 was excess profits tax. The Bureau explains, however, that if the excess-profits feature of the tax law were repealed, the normal (plus surtax) rate of 40 per cent would be applied to the part of the income now taking the excess profits tax rate of 85½ per cent. Thus, other things being equal, the absence of the excess-profits tax in 1943 would have reduced the carriers' federal tax bill by $471,000,000, not by $380,359,690.

State taxes paid by the Class I roads in 1943 amounted to $263,725,594, the highest amount ($28,336,651) going to New York, with New Jersey's take of $25,755,077 a close second. The smallest amount, $151,470, went to Delaware. The Bureau found that railroad statistics now provide no data from which a satisfactory average could be computed to measure the relative severity of the state tax burdens. It does, however, present regional figures on tax accruals, other than federal taxes, per dollar of operating revenue.

Local Taxes Are Up Too—The 1943 average for all regions was 2.99 cents, as compared with five cents in 1940. In the former year the range was from 1.93 cents in the Southwestern region to 3.66 cents in the Great Lakes region; in 1940 it was from 4.36 cents in the Southwestern region to 5.27 cents in the Northwestern region.

The Bureau found the "degree of uniformity" in 1940 "remarkable in view of the different tax laws which determine the other than U. S. government railway taxes in the various states."

In its discussion of carloading figures, the Bureau suggests various reasons why the carloading figures have kept up despite the downward course since last November in the Federal Reserve Board's index of industrial production. It then passes on to a discussion of recent commodity statistics which indicate changes in the geographical distribution of tons originated and tons terminated during the war.

For the first quarter of 1944 and compared with the first quarter of 1940, all areas reported increases in the tons originated; but the percentages varied widely—from 23.93 per cent for the New England area to 117.82 per cent for the West South Central area. When the comparison is confined to the manufactures and miscellaneous classes of commodities, the range is from a 23.87 per cent increase for New England to 142.06 per cent for the West South Central area.

Increased Traffic to Pacific—The Pacific area showed the greatest relative increase in tons terminated of all carload freight—140.02 per cent; for manufactured and miscellaneous products alone it shows an increase of 239.74 per cent. Smallest percentage increase (41.42) for tons terminated was shown by the East North Central area; while the West North Central area, reporting a gain of only 20.2 per cent, was low on manufactures and miscellaneous commodities terminated.

Railroad Fires Increased in 1943

An increase in the number of fires on railroad property in 1943 as compared with 1942 was reported at a Western region meeting of the Fire Protection and Insurance section of the Association of American Railroads held at Chicago on October 5. This meeting and another which will be held in New York, on October 24, were scheduled to replace the annual meeting heretofore held in October.

According to the data prepared by the section, there were 5,412 fires on railroad property in 1943 compared with 4,593 in 1942 while the loss amounted to $8,427,925 and $5,781,508 in the respective years. During 1943, there were 277 fires in which the loss exceeded $5,000 each and 5,135 in which the loss was less than $5,000. A total of 2,056 fires occurred in freight cars in 1943 with a resulting loss of $3,132,443 while 1,253 were in non-fire resistant building structures where the loss amounted to $3,542,732.

These two types of fires constituted 61 per cent of all fires and 79 per cent of the total loss in 1943.

During the discussion, emphasis was placed upon the need for protection on the underside of wooden floors of freight cars to prevent sparks from brakes in high speed operation from igniting the wood. It was also recommended that the Bureau of Explosives review its rules for unloading tank cars of inflammable liquids with a view to clarification and improvement in the methods employed. It was also the opinion of those present that additional fire protection beyond present practice is needed on Diesel-electric locomotives.

Train Communication for an Industrial Railroad

Linking a central railroad dispatcher's office and five Diesel-electric locomotives in two-way communication, a baby "broadcast network," with a range of only 15 miles, is expected to be in operation on terminal railroad lines of the Westinghouse Electric & Manufacturing Co. at East Pittsburgh, Pa., within three months.

The immediate purpose of the communications system will be to speed wartime switching operations to and from Westinghouse plants in East Pittsburgh, Trafford and Linhart, Pa., by allowing switching orders to be delivered to engines wherever they are. The three plants are within a five-square-mile area in the industrial Monongahela river valley.

A second purpose of the network is to allow experimentation in the field of railroad radio which may lead to development of radio communication systems for broader railroad applications.

Operation of the two-way radio system is expected to save many hours of switching time and many miles of needless operation. Up to now, engines completing a series of operations perhaps as much as five miles from the dispatcher's office had to travel back to that office for new instructions. With the radio facilities, new instructions can be given at will to each of the five engines at any location on the company-operated 25 miles of switchbacks.

The main station, a 50-watt FM transmitter, will be at the East Pittsburgh works of Westinghouse. The mobile transmitters will be of 40-watt power and all six stations will broadcast in the 30-megacycle band, a frequency too high for the ordinary receiving set to pick up.

Authorization for construction of the unusual radio system has been granted by the Federal Communications Commission, and War Production Board priorities for the necessary equipment accompany it.

Engineers of the inter-works railway system are now taking special courses in radio operation and all must pass class 3 operators' tests before the communication system is put into operation. A class I radio engineer will be on duty in the central station.

Rate-Making Should be Exempt from Anti-Trust Laws

Because railroad rate making procedures are under the jurisdiction and regulation of the Interstate Commerce Commission, the carriers should be given specific relief from anti-trust laws, John S. Burchmore, Chicago attorney, declared at the annual Fall dinner of the Junior Traffic Club of Chicago on October 5.

"I am a believer in the Sherman anti-trust law," Mr. Burchmore asserted, "and against the violation of its principle by any conspiracy in restraint of trade. While I cannot discuss the merits of the government's anti-trust suit filed against the western railroads, it is pretty obvious that it is

* * *

Give 'em the old 1-2
1-LOAD 2-UNLOAD
ALL CARS PROMPTLY
Your Government says
"Every hour saved in freight-car turnaround time means more cars available for the Victory March to Berlin and Tokio!"

One of the "Freight Car Turn-Around" Posters Being Circulated by the Office of Defense Transportation

part of a 'softening-up' process on the part of southern governors and others to gain ground for political rate-making.

"What shippers and the public generally want is that the railroads continue the initiation of their rates, and have the making of those rates and their review by the I. C. C. free from political interference and undertaken by men whose life work is running the railroads or reviewing rates. It is in the public interest to permit no conspiracy or connivance among railroads or any other industry which does actually restrain commerce, but the law should be sensibly construed. Where the statute assigns particular matters to the jurisdiciotn of the I. C. C., such as the regulation of rate-making, then carriers acting within the scope of such regulation, should be given specific relief."

Mr. Burchmore added that "railroad managements, in rate-making, should be free of every kind of pressure from without or within—even from their own security holders."

Status of Tulsa Union Depot

The Interstate Commerce Commission has been advised by its Bureau of Law that "to be consistent with its rulings relative to other union depot companies," the commission should find that the Tulsa Union Depot Company "is an operating common carrier and not a mere lessor." The memorandum was filed in the No. 29145 proceeding in which the commission recently received Examiner Howard Hosmer's proposed report recommending a finding that the Depot Company is not a carrier but is a lessor within the meaning of those terms in section 20(8) of the Interstate Commerce Act.

The proceeding was instituted by the commission following the Depot Company's refusal to file reports under section 20 on the ground that the section does not apply to it. The Hosmer proposed report was noted in the *Railway Age* of August 26, page 352.

New Haven Tests Radio Train Communication

The New York, New Haven & Hartford is cooperating with the Westinghouse Electric & Manufacturing Co. in the conduct of tests with radio communication between front and rear ends of freight trains, and between train crews and wayside points. Westinghouse engineers are at present engaged in the installation of experimental equipment on a steam locomotive and a caboose at the New Haven's Cedar Hill (Conn.) enginehouse. The wayside equipment will be tried out at several locations in order to work out whatever "bugs" may develop under varied conditions.

Because of the diversified nature of the New Haven's operations, encompassing steam, Diesel, and 11,000-volt electrically-operated trains, the territory is regarded by Westinghouse engineers as an ideal testing ground. The experiments embody use of FM radio and many other developments which have been made in this type of equipment in the past ten years.

The steam locomotive which is being equipped for the experiments will be put in regular service on the 125-mile freight run between New Haven and Maybrook, N. Y., the first dozen miles of which are on the electrified zone, swinging north from the electrified shore line at Devon. First installation of the ground equipment will be made at this junction point, where the "interference" problems presented by the 11,000-volt overhead wires will have to be met.

It is anticipated the experiments will continue over a number of weeks, and may include later installations of the test equipment on Diesel and electric locomotives, to explore the possibilities under every type of operation.

Atlantic Board Reaffirms Stand Against St. Lawrence Seaway

The Atlantic States Shippers Advisory Board, in its regular meeting at New York on October 5, reaffirmed its opposition to any congressional or executive action which would authorize and provide for the construction of the St. Lawrence Seaway and Power Project. The board, noting that the St. Lawrence river cannot be used for more than seven months a year, declared that this excess transportation facility in the long run can be valuable only for foreign trade and principally for the benefit of foreign ship operators and would undermine the financial stability of the country's domestic transportation system and its ability to provide adequate and efficient service. The board said the project presents no prospect of such a reduction in transportation costs as to produce new traffic, and therefore the traffic on the canalized St. Lawrence river must be that diverted from domestic transportation facilities of the United States.

September Export Traffic

Export freight traffic, excluding coal and grain, handled through United States ports in September totaled 166,360 cars, an increase of 24 per cent above the 134,217 cars handled in September, 1943, according to the Association of American Railroads. Export grain unloaded at the ports totaled 3,151 cars, as compared with 2,842 cars in September, 1943, an increase of 11 per cent.

Also, the railroads handled 248 cars of coastal freight in September, a drop of 65 per cent under the 714 cars handled in September, 1943. The grand total of all cars unloaded in September, excluding coal, was thus 169,759, the average daily unloadings being 5,659 cars—a new high record which marked the seventh consecutive month in which the daily average was more than 5,000 cars.

Contract Truckers Can Not "Tack On" New Routes

Contract motor carriers may not provide through services over a combination of routes which are built up by "tacking" together operations authorized under specific permits, the Interstate Commerce Commission has ruled in a decision by Division 5. The decision is in No. MC-50404 (Sub-No. 3), T. B. Longshore Extension—Salem-Youngstown, Ohio.

In explaining the "tacking" practice which it was prohibiting, the commission set out the following example: "If a contract carrier were issued a permit to operate from A to B and later was issued a permit to operate from B to C, the two authorities granted would not enable the carrier to provide service from A through B to C. Nor has a contract carrier holding a permit to operate from A to B and which acquires . . . the contract-carrier authority of another carrier operating from B to C, been allowed to join the connecting contract-carrier rights to render through service."

The report points out that in reaching its decision the commission was expressing its agreement with the view taken by the Bureau of Motor Carriers in informal rulings. Also, it is noted that the situation is different with respect to regular-route common carriers, which have been permitted to "tack on" connecting new routes to existing routes. With respect to contract carriers, however, "no provision is made in the act" for the establishment by them "of through routes or joint rates . . . or for a single contract carrier to render through service between points specified in separate authorities held by it. On the contrary, the act contemplates that the service of a contract carrier, under a permit held by it, shall be as specified in an individual contract or agreement with the shipper."

Refrigerator Car Situation Acute in Northwest

The refrigerator car situation in the Pacific northwest is so acute that fruit growers in the Yakima area are shipping ice from as far as Chicago to protect their crops from spoiling, Ivan L. Plett of Yakima told members of the Pacific Northwest Advisory Board at its sixtieth meeting at Spokane, Wash., on October 1. L. M. Betts, manager of the Railroad Relations section of the Association of American Railroads, offered little hope that the refrigerator car situation would be relieved in the near future. "About 3,600 new cars of all kinds are coming," he said, "and that is not nearly enough to meet the demand. In one area alone last year, 3,800 cars could have been used to meet the increased demand."

P. R. R.'s Plans for Sleeping Car Service

In reporting the Pullman plan, presented to the court for divorcing its manufacturing and car-operating businesses in the October 7 *Railway Age* (page 554), it was briefly noted that the Pennsylvania had announced its intention to operate its own sleeping and parlor cars.

The full text of P.R.R. President Clement's letter to Pullman President Crawford—on file in the federal court at Philadelphia—reads as follows:

"In connection with the impending withdrawal of the Pullman Company from the business of operating and servicing Pullman cars, the Pennsylvania proposes to own and operate its sleeping car service, acquiring the necessary equipment from the Pullman Company in accordance with the provisions of the agreement effective January 1, 1936.

"The Pennsylvania will call upon Pullman to fulfill its contract obligations involving the sale of sleeping cars as specified in the agreement. In addition, the Pennsylvania may wish to negotiate the purchase of other cars now owned by the Pullman

Company in accordance with Section 21 of the final judgment of the Federal District Court, rendered May 8, 1944, involving the sale and purchase of used sleeping cars.

"Any plan which Pullman submits to the Court should provide for the sale of equipment as specified in the agreement with the Pennsylvania. The Pennsylvania thinks it necessary that this should be done in order that the Court may be made fully acquainted with the situation, and if it is not done by the Pullman Company the Pennsylvania will regard it as necessary and appropriate to acquaint the Court with its position. Will you kindly advise?"

Five Cent an Hour Increase for Suburban Line Employees

An increase of five cents an hour on a straight-time basis for operating employees of the Chicago, North Shore & Milwaukee and the Chicago, Aurora & Elgin was recommended on October 9 by the emergency board appointed by President Roosevelt and consisting of H. D. Rudolph, chairman; W. H. Spencer and Ernest H. Tipton. The increase would be retroactive to the dates when the raise was asked by the Brotherhood of Locomotive Firemen and Enginemen and the Brotherhood of Railroad Trainmen or to February 4 on the Elgin and to April 6 on the North Shore. The board was appointed on September 19 after the dispute over wage increases had reached the point where a strike had been called.

Freight Car Loading

Loadings of revenue freight for the week ended October 7 totaled 877,942 cars, the Association of American Railroads announced on October 12. This was a decrease of 35,057 cars, or 3.8 per cent below the preceding week, a decrease of 28,415 cars or 3.1 per cent below the corresponding week last year, and a decrease of 31,308 cars or 3.4 per cent below the comparable 1942 week.

Loading of revenue freight for the week ended September 30 totaled 912,999 cars, and the summary for that week, as compiled by the Car Service Division, A. A. R., follows:

Revenue Freight Car Loading

For the Week Ended Saturday, September 30 District	1944	1943	1942
Eastern	169,006	171,200	165,617
Allegheny	199,419	194,024	189,672
Pocahontas	56,991	56,759	55,755
Southern	124,733	122,487	125,626
Northwestern	144,270	153,392	149,881
Central Western	144,974	137,861	142,446
Southwestern	73,606	74,921	78,289
Total Western District	362,850	366,174	370,616
Total All Roads	912,999	910,644	907,286
Commodities			
Grain and grain products	50,025	53,496	50,557
Live stock	22,832	23,508	21,453
Coal	180,170	179,272	168,754
Coke	14,203	14,903	14,272
Forest products	44,850	45,941	49,537
Ore	73,421	84,665	78,857
Merchandise l.c.l.	109,797	102,239	91,842
Miscellaneous	417,701	406,620	432,014
September 30	912,999	910,644	907,286
September 23	898,667	907,311	897,427
September 16	892,358	902,766	903,099
September 9	825,953	834,670	814,897
September 2	896,450	901,075	887,960
Cumulative Total 40 Weeks	33,420,933	32,419,038	33,147,110

In Canada.—Carloadings for the week ended September 30 totaled 77,184 as compared with 74,397 for the preceding week and 74,667 for the corresponding period last year, according to the compilation of the Dominion Bureau of Statistics.

Total for Canada	Total Cars Loaded	Total Cars Rec'd from Connections
Sept. 30, 1944	77,184	38,909
Sept. 23, 1944	74,397	37,919
Sept. 16, 1944	74,871	38,331
Oct. 2, 1943	74,667	41,455
Cumulative Totals for Canada		
Sept. 30, 1944	2,722,093	1,497,921
Oct. 2, 1943	2,554,343	1,560,250
Oct. 3, 1942	2,510,937	1,322,222

Rock Island 4-8-4's—a Correction

In the August 26, 1944, issue of the *Railway Age* describing the 4-8-4 type locomotives built for the Chicago, Rock Island & Pacific an error in the counterbalance data appears with respect to the main wheels. The fifth paragraph on page 335 should read as follows: "In counterbalancing these locomotives, the wheels at positions 1, 3 and 4 are counterbalanced for a static overbalance of 147 lb., 145 lb. and 144 lb., respectively, without crossbalance. The dynamic augment for these wheels, at diameter speed (74 m.p.h.), is 7,550 lb., 7,450 lb. and 7,400 lb., respectively. The main wheels are crossbalanced. For the right main wheel the component at right angles to the crank pin is 125 lb. and the component in line of crank pin is 93 lb. producing a resultant overbalance of 156 lb. The dynamic augment for this wheel, at diameter speed, is 8,000 lb. For the left main wheel the component in line of crank pin is 146 lb. and the component at right angles to it is 68 lb., resulting in an overbalance of 161 lb. The dynamic augment for this wheel, at diameter speed, is 8,250 lb. The total weight of reciprocating parts on each side is 1,997 lb."

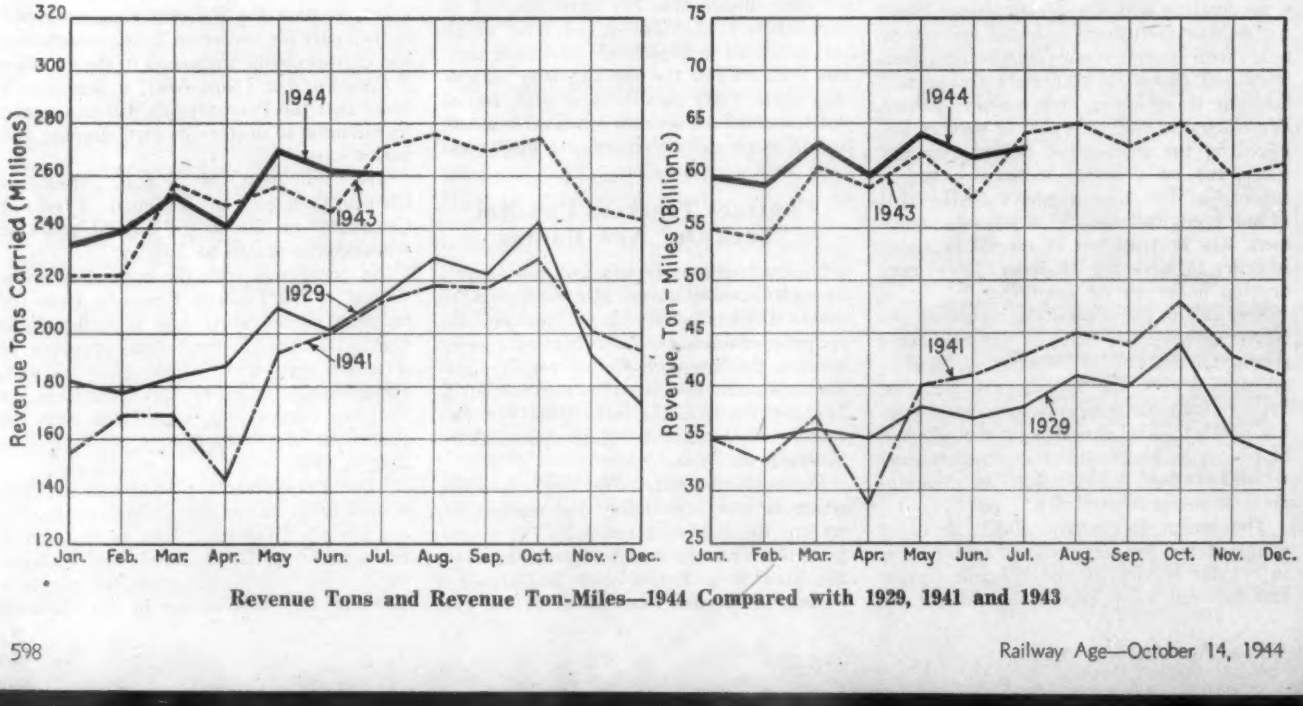
Pearson Replaces Gill on A.S.A. Board

R. L. Pearson, vice-president in charge of operation, New York, New Haven & Hartford, has been nominated by the Association of American Railroads to fill the uncompleted term of C. A. Gill, retired vice-president, Central of New Jersey, on the board of directors of the American Standards Association. Mr. Pearson will serve in Mr. Gill's place until December, 1945.

Pullman-Standard Plant Forges 5,000,000th Shell

More than 100,000,000 lb. of steel, costing more than $2,472,000, has been saved for the government by the Pullman-Standard Car Manufacturing Company's Butler, Pa., plant in the manufacture of heavy artillery shells, it was revealed October 7 during a celebration commemorating the forging of the five-millionth shell. The saving represents the reduced amount of steel needed because of an improved shell-making process pioneered by the company.

In the manufacture of the five million shells, Ray M. Fox, Pullman-Standard



Revenue Tons and Revenue Ton-Miles—1944 Compared with 1929, 1941 and 1943

SELECTED INCOME AND BALANCE-SHEET ITEMS OF CLASS I STEAM RAILWAYS

Compiled from 131 reports (Form IBS) representing 135 steam railways
(Switching and Terminal Companies Not Included)

All Class I Railways

Income Items	For the month of July 1944	For the month of July 1943	For the seven months of 1944	For the seven months of 1943
1. Net railway operating income	$98,633,421	$127,849,931	$650,037,565	$840,026,078
2. Other income	16,916,797	15,890,354	105,671,525	97,471,696
3. Total income	115,550,218	143,740,285	755,709,090	937,497,774
4. Miscellaneous deductions from income	3,182,372	2,607,476	24,638,196	17,054,036
5. Income available for fixed charges	112,367,846	141,132,809	731,070,894	920,443,738
6. Fixed charges:				
6-01. Rent for leased roads and equipment	13,470,454	13,974,460	90,153,766	102,799,118
6-02. Interest deductions[1]	38,681,192	35,833,115	240,840,206	252,759,962
6-03. Other deductions	120,653	119,626	903,567	865,078
6-04. Total fixed charges	52,272,299	49,927,201	331,897,539	356,424,158
7. Income after fixed charges	60,095,547	91,205,608	399,173,355	564,019,580
8. Contingent charges	2,733,265	2,390,753	19,277,673	16,639,432
9. Net income	57,362,282	88,814,855	379,895,682	547,380,148
10. Depreciation (Way and structures and Equipment)	26,691,330	25,553,008	186,133,203	183,990,081
11. Amortization of defense projects	15,787,955	14,925,367	104,792,612	77,869,534
12. Federal income taxes	123,439,864	135,167,083	769,839,321	798,658,318
13. Dividend appropriations:				
13-01. On common stock	3,696,590	3,723,908	75,135,715	70,128,289
13-02. On preferred stock	796,481	963,744	15,784,396	15,563,373
Ratio of income to fixed charges (Item 5 ÷ 6-04)	2.15	2.83	2.20	2.58

All Class I Railways

Selected Asset and Liability Items	Balance at end of July 1944	Balance at end of July 1943
20. Investments in stocks, bonds, etc., other than those of affiliated companies (Total, Account 707)	$586,252,079	$563,096,596
21. Cash	1,022,244,133	1,182,998,334
22. Temporary cash investments	1,860,236,088	1,315,557,447
23. Special deposits	158,461,907	161,414,819
24. Loans and bills receivable	171,438	256,111
25. Traffic and car-service balances—Dr.	45,585,959	36,585,386
26. Net balance receivable from agents and conductors	155,292,414	170,297,248
27. Miscellaneous accounts receivable	639,352,086	591,143,021
28. Materials and supplies	594,392,607	520,110,547
29. Interest and dividends receivable	24,465,307	17,889,478
30. Rents receivable	1,417,915	1,041,251
31. Other current assets	63,316,135	51,362,394
32. Total current assets (items 21 to 31)	4,564,935,989	4,048,656,036
40. Funded debt maturing within 6 months[2]	202,035,131	152,613,204
41. Loans and bills payable[3]	12,838,386	15,113,928
42. Traffic and car-service balances—Cr.	207,399,133	152,163,043
43. Audited accounts and wages payable	452,515,377	390,064,086
44. Miscellaneous accounts payable	121,091,239	106,650,263
45. Interest matured unpaid	48,217,911	38,486,979
46. Dividends matured unpaid	7,077,111	3,304,227
47. Unmatured interest accrued	60,792,906	62,572,780
48. Unmatured dividends declared	10,018,541	13,352,422
49. Unmatured rents accrued	18,436,152	18,751,195
50. Accrued tax liability	1,878,496,500	1,511,944,303
51. Other current liabilities	89,870,259	71,379,624
52. Total current liabilities (items 41 to 51)	2,906,753,515	2,383,782,850
53. Analysis of accrued tax liability:		
53-01. U. S. Government taxes	1,723,923,104	1,357,438,505
53-02. Other than U. S. Government taxes	154,573,396	154,505,798

[1] Represents accruals, including the amount in default.
[2] Includes payments of principal of long-term debt (other than long-term debt in default) which will become due within six months after close of month of report.
[3] Includes obligations which mature not more than 2 years after date of issue.
Compiled by the Bureau of Transport Economics and Statistics, Interstate Commerce Commission. Subject to revision.

works manager, said enough steel has been saved to manufacture 1,700 medium tanks, 111 LSMs (Landing Ship, Medium), 2,400 lightweight all-steel freight cars, 740,000 81 mm. trench mortars, 40 complete streamlined trains, including the locomotives, or more than 2,400,000 additional 105 mm. shells. The company began mass production of heavy artillery shells in its Butler plant early in 1940 and the first shell rolled off the production lines on November 7, 1940.

Wage Disputes May Multiply If Formula Is Revised

Railroad labor problems are likely to multiply "in the near future and during the post-war period," and railroad management and labor ought to get together "as partners in a business enterprise," Hallan Huffman, general attorney of the Great Northern, told members of a transportation industry conference of the Controllers Institute of America, meeting at Chicago on October 3. Mr. Huffman declared that the "Little Steel" formula, which has been "a pretty good buffer in curbing the inflationary tendencies of various demands for increases in wage rates," is in danger of being overthrown as a result of the attack launched last February by A.F.L. and C.I.O. steel workers in 81 steel companies.

"If the 'Little Steel' formula is modified to permit general wage rate increases in the cases now at issue, what will be the effect upon labor organizations representing employees in the transportation industry?" he asked. "Will it be an incentive to those unions to make like demands? And further, what will happen to the wage stabilization program after the expiration of the wage stabilization act on June 30, 1945? Will it be continued after the war? Will there be a national wage policy after the war, or will the movement of wages be left solely to bargaining between management and labor?" Mr. Huffman said he had no answers to these questions, but that he suggested them to emphasize "the labor problems which may confront us in the near future and during the post-war period."

He pointed out that the growth and development of labor legislation has been more or less in step with the growth and development of power by the labor organizations, but he warned that the legislative attitude, both state and national, appears to be undergoing a change.

"At least," he declared, "the stage has been reached where labor should be concerned with the legislative trend. I am convinced it is fearful of further government control—just as fearful as is management. It would seem, therefore, that labor and management have much in common."

R. C. C. Distribution

E. G. Buckland, president of the Railroad Credit Corporation, announced last week that the Corporation will make a liquidating distribution on October 20, of one-half of one per cent of its fund as of September 30, amounting to $363,137.71. Of this amount, $328,157.32 will be paid in cash and $34,980.39 will be credited on carriers' indebtedness to the Corporation.

This will bring the total amount distributed to $66,823,178.46, or 91 per cent of the original fund contributed by carriers participating in the Marshalling and Distribution Plan, 1931. Of this total, $38,284,573.35 will have been returned in cash and $28,538,605.11 in credits.

Must Dispose of Interstate Freight Stock

By a further order in its No. MC-F-2181 and related proceedings, the Interstate Commerce Commission has required the United States Freight Corporation and Hickok Oil Corporation within 90 days from October 2 to divest themselves completely of all interest in the stock of the Interstate Motor Freight System, so denying certain requests for modifications of the original order to this effect, the background of which was noted in *Railway Age* of June 24, page 1221. At the same time, the commission denied the petition of Balthasar H. Meyer, who holds 49.56 per cent of the capital stock of the U. S. Freight as trustee for the New York Central, for reconsideration and modification of certain findings in the previous report, and for discontinuance of the investigation so far as he is involved.

Representation of Employees

The Brotherhood of Locomotive Engineers has supplanted the Brotherhood of Locomotive Firemen & Enginemen as the Railway Labor Act representative of Denver & Rio Grande Western engineers, according to results of a recent election which has been certified by the National Mediation Board. The B. of L. E. won by a vote of 287 to 279.

Meanwhile, the Brotherhood of Railroad Trainmen has beaten, by a vote of 164 to

111, a challenge from the Order of Railway Conductors, thus retaining the right to represent D. & R. G. W. road conductors. Also, the B. of R. T. has supplanted the Railroad Yardmasters of America as representative of Texas & Pacific yardmasters; while the Switchmen's Union of North America has supplanted the Amalgamated Association of Street, Electric Railway and Motor Coach Employees of America as representative of the Oakland Terminal's yardmen (foremen and helpers).

As a result of three recent elections on the Union, the United Steelworkers of America, Congress of Industrial Organizations, has been certified as representative of that road's tower and telegraph employees, mechanical department foremen or supervisors of mechanics, and clerical, office, station and storehouse employees. In another election, the C. I. O. organization extended its coverage of Union electrical workers to include telegraph and telephone linemen; while on the Steelton & Highspire it has won the right to represent maintenance of way employees.

Electrical workers, and their helpers and apprentices, employed by the Houston Belt & Terminal, have chosen the International Brotherhood of Electrical Workers, operating through the Railway Employees Department, American Federation of Labor. That road's boilermakers and their helpers also participated in the election, but in that case the board was unable to make a certification, because less than a majority of those eligible to choose representatives designated their choice. Some of the Houston Belt employees involved were formerly represented by the Association of Shop Crafts in the Mechanical Department, Houston Belt & Terminal Railway Company, and some by the Association of Boilermakers, Coach Cleaners, Shop, Repair Track, and Roundhouse Laborers.

The board has closed Case No. R-1293 which involved a request of the American Train Dispatchers Association for investigation of an alleged representation among dispatchers employed by the New York Central lines. The closing followed receipt by the board of a letter from the Dispatchers Association president, C. L. Darling, withdrawing his organization's application for the board's services.

This case had been linked with another brought by the Brotherhood of Railroad Trainmen at board hearings last month to determine whether the N. Y. C. lines should be considered as a whole or separately in the determination of employee representation. As noted in the *Railway Age* of September 2, page 384, the A. T. D. A. and the B. of R. T. favored system-wide elections, while the idea of voting by constituent lines was favored by the Order of Railway Conductors and the Order of Railroad Telegraphers.

Letter Ballot Returns

The recommendations of various committees of the A. A. R. Mechanical Division, submitted to letter ballot of the members in a circular on September 18, have all been favorably acted upon, and approved by the association as announced in Circular D. V. -1078, sent out on October 4 by Secretary A. C. Browning. A total of 21 propositions to amend the standard and recommended practice of the division were approved as follows: Propositions 1 to 8, covering brake equipment details; Propositions 9 and 10 on welding; Proposition 11 on designating letters for kitchen-pantry cars; Propositions 12 to 14 on tightblock coupler details; Propositions 15 to 17 on locomotive details; Proposition 18 on a revised method of packing journal boxes; Propositions 19 and 20 on revised specifications for firebox steel and machine bolts; and Proposition 21 on increasing the rim thickness of 750-lb. chilled-iron car wheels to 2⅛ in. and 850-lb. wheels to 2⅜ in. Propositions 1 to 10 inclusive and 12 to 20 inclusive are approved effective January 1, 1945. Propositions 11 and 21 are approved effective March 1, 1945.

More Than 35,000 Railroaders Attend Electro-Motive School

More than 35,000 railroad employees connected with Diesel-electric locomotive operation have attended the Diesel Locomotive School of the Electro-Motive Division of the General Motors Corporation since it was started on October 15, 1934. The first classes, organized in cooperation with General Motors Institute, were held at Flint, Mich., and in 1938 were moved to LaGrange, Ill. The course at LaGrange consists of two weeks of lectures, study and demonstration. In addition, a school car has been operated over the railroads since February 20, 1937 to extend the benefits of instruction. Since 1937 it has covered 225,000 miles over 37 different lines.

Northwest Carmen's Association Elects New Officers

At the annual meeting of the Northwest Carmen's Association, held on October 2, at St. Paul, Minn., the following officers were elected for the ensuing year: President, F. E. Starr, car foreman of the Chicago, Burlington & Quincy at St. Paul, Minn.; first vice-president, H. W. Maurer, truck shop foreman of the Minneapolis, St. Paul & Sault Ste. Marie at Minneapolis, Minn.; second vice-president, E. J. Davis, assistant car foreman of the Great Northern at Minneapolis, Minn.; third vice-president, H. L. Hewing, general car department supervisor of the Chicago, Milwaukee, St. Paul & Pacific at Minneapolis, Minn.; secretary-treasurer, E. N. Myers, chief interchange inspector of the Minnesota Transfer at St. Paul, Minn.

How One Airline Greets Its New Employees

"Welcome to American" is the greeting of American Airlines to each new employee in a brightly illustrated, 44-page booklet. "Designed to answer many of your questions and to make you feel at home," the pamphlet quickly acquaints the reader with background information, and brings him up-to-date on company policies and "future hopes."

He is told by A. M. Kemp, president of the organization, that "in selecting you as a fellow worker, we have already demonstrated our confidence in your ability to become an important part of our rapidly expanding organization. You will find us a hard-working, friendly group of people with a 'oneness' of purpose and spirit."

The accompanying reproduction of the table of contents indicates the variety of subjects covered in the handbook.

Pride in the organization is instilled by the chapter entitled "How American Won Its Wings." Therein is discussed the by-word of American Airlines, "Aviation is not unsafe, but like the sea, it is terribly unforgiving of any carelessness or neglect," which slogan was suggested by its one-time president, Cyrus Rowlett Smith, now Brigadier General and Deputy Commander of the Air Transport Command. American's role in the Louisville flood of 1937 and the New England hurricane of 1938 is briefly detailed. Now under contract to the government, the airline's part in the Air Transport Command is given considerable emphasis.

Employee suggestions are invited. In the matter of business conduct the employee is warned that "by exercising common sense, decency and a spirit of friendly helpfulness, you will be a valuable representative."

ALL AMERICAN

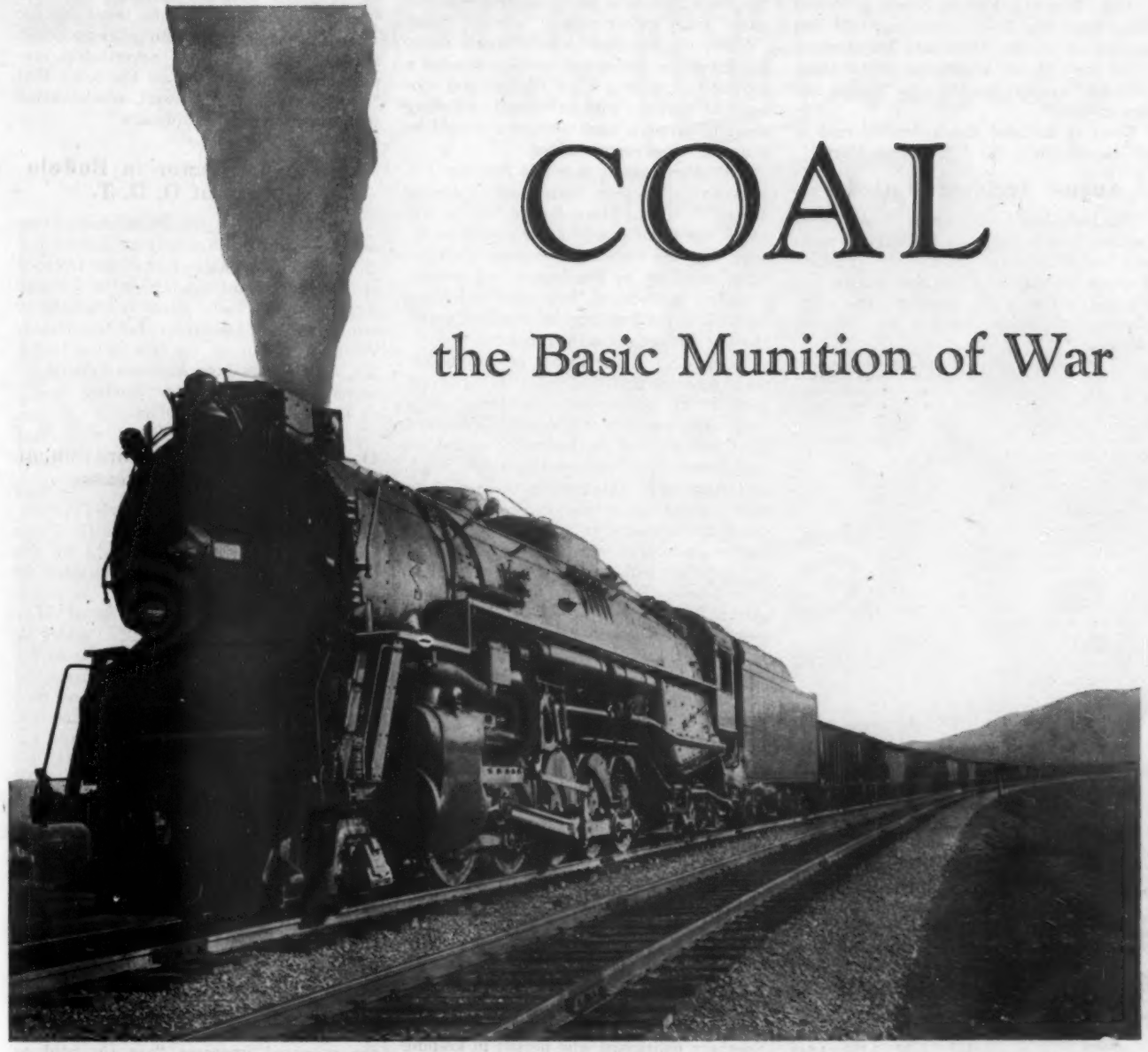
A Handbook of Facts . . .

You'll want to know

CONTENTS

	PAGE
A GREETING FROM A. N. KEMP	6
A MESSAGE FROM RALPH S. DAMON	7
HOW AMERICAN WON ITS WINGS	8
WORKING TOGETHER — THE AMERICAN WAY	15
Your Pay	15
Payroll Deductions	16
Hours of Work	16
Promptness	17
Married Women	17
Address, Name, Dependency or Marital Changes	17
Draft	17
Outside Work	18
Resignations	18
Discharge	18
Gosta Cripe?	19
Departmental Procedure	19
Suggestion System	20
Absence	21
Leave of Absence	21
Holidays	21
Vacations	22
Social and Athletic Activities	22
Flagship News	22
Eating Facilities	23
Dress	23
Business Conduct	24
Inter-Department Visits	25
Personal Visitors	25
Care of Property and Tools	26
Lost and Found	26
Waste	26
The American Type	27
Supervisory Training	27
System Trips	28
Half-Fare Travel	29
Transportation	29
Hostess Service	30
Reasoning	30
Your AA Bus	30
Other Awards	31
HOW AMERICAN PROTECTS ITS NEST	32
Accidents	32
Accident Reports	32
Safety Rules	32
Medical	33
Fires	34
Smoking	34
Air Raid Instructions	35
Identification	35
Secret, Confidential and Restricted	35
Packages	36
Camera	36
SECURITY — OR KEEPING A STEADY COURSE	37
Insurance	37
Group Life Insurance	37
Group Sickness and Accident Insurance	38
Hospitalization	38
Retirement Benefit Plan	38
Credit Union	38
War Bonds	39
Charities	39
HOW TO GAIN ALTITUDE IN AMERICAN AIRLINES	40
You Can Advance With American	40
When a Fellow Needs a Friend Other than His Boss	41

News Department continued on next left-hand page



COAL

the Basic Munition of War

The availability of enormous quantities of coal for our wartime activities is a vital factor in our success in the war.

A vast amount of this coal is moved over C. & O. lines, where all previous traffic records have been broken. Forty 2-10-4 super-power Lima locomotives, capable of regularly handling trains of 160 loaded coal cars, are taking an important part in moving this tremendous volume of traffic.

LIMA LOCOMOTIVE WORKS LIMA LOCOMOTIVE WORKS INCORPORATED INCORPORATED, LIMA, OHIO

And "When a Fellow Needs a Friend Other than His Boss," American tells him to look in on the Personnel Department, which has a "broad knowledge of the whole company" and an insight into "human nature as well."

There is included also a detailed map of LaGuardia Field, A. A.'s "Home Port."

August Accident Statistics

The Interstate Commerce Commission on October 9 made public its Bureau of Transport and Economics' preliminary summary of steam railway accidents for August and this year's first eight months. The compilation, which is subject to revision, follows:

Item	Month of August		8 months ended with August	
	1944	1943	1944	1943
Number of train accidents*	1,389	1,411	10,837	10,906
Number of casualties in train, train-service and non-train accidents:				
Trespassers:				
Killed	177	214	1,053	1,250
Injured	124	141	766	966
Passengers on trains:				
(a) In train accidents*				
Killed	47	35	90	54
Injured	176	188	1,018	1,460
(b) In train-service accidents				
Killed	7	8	41	34
Injured	269	279	1,922	1,848
Travelers not on trains:				
Killed	1	1	8	9
Injured	88	85	684	746
Employees on duty:				
Killed	84	91	667	650
Injured	4,439	4,218	31,064	29,998
All other nontrespassers:**				
Killed	120	138	1,225	1,240
Injured	479	459	4,302	4,234
Total — All classes of persons:				
Killed	436	487	3,084	3,237
Injured	5,575	5,370	39,756	39,252

* Train accidents (mostly collisions and derailments) are distinguished from train-service accidents by the fact that the former cause damage of more than $150 to railway property.

** Casualties to "Other nontrespassers" happen chiefly at highway grade crossings. Total highway grade-crossing casualties *for all classes of persons, including both trespassers and nontrespassers,* were as follows:

Persons:				
Killed	115	97	1,102	1,049
Injured	265	219	2,479	2,420

Burlington Trucks Get a Bit More Freedom

The Burlington Transportation Company, affiliate of the Chicago, Burlington & Quincy, got two additional trucking routes, lost a route, and got a bit more freedom than it formerly had in connection with its operations over five other routes between points in Iowa, as a result of a report on reconsideration by the Interstate Commerce Commission, Division 5. The report embraces No. MC-2181, Sub-Nos. 1 and 2.

The prior report in Sub-No. 1 had denied the Burlington application for authority over four routes, two of which are now granted by the report on reconsideration. The first connects with the Transportation Company's present route between Chicago and Omaha, Nebr., at Sheffield, Ill., and extends to the Tri-Cities of Rock Island, Ill., Moline, and Davenport, Iowa. Here the commission's favorable action was based on its finding that the route, which would shorten by 25 miles the applicant's present route between Chicago and the Tri-Cities, was an "operating convenience" route rather than a "service" route. "Where the granting of an alternate route, not involving additional service, enables a carrier to render a more efficient and economical service without unduly affecting existing carriers, such authority should be granted," the report added.

The other route granted in Sub-No. 1 is between St. Joseph, Mo., and Clarinda, Iowa, 77 miles. Here the certificate will carry the usual conditions designed to insure that the trucking operation shall remain auxiliary to Burlington rail service, including a so-called "key point" condition forbidding the handling by truck of traffic moving between specified points.

In Sub-No. 2 the report on reconsideration reverses that finding of the prior report which authorized operations on a route between Mount Pleasant, Iowa, and Washington; and it denies the certificate sought on a route between Davenport, Iowa, and Ainsworth. Meanwhile the prior report's grant of certificates covering five other Iowa routes is affirmed, the report on reconsideration also removing that condition which had stipulated that no service should be rendered at any point, other than Attica, Iowa, which is not a station on the Burlington. The general condition requiring that the service remain auxiliary to rail service is retained, in which connection the commission calls attention to its recent decision in the Texas & Pacific case wherein it construed that general condition "to limit the transportation which may be performed by truck to the transportation of rail traffic, moving at the railroads' responsibility, on railroad billing, and at railroad rates."

Solution Offered to South's Rate Dispute

(*Continued from page 595*)

settlement of any differences of opinion that may exist. I refer to the small group of Southern politicians who persist in keeping this agitation alive in the public press, in the councils of state governments, and in the halls of Congress."

Solution Proposed—"There must be a better way to solve this freight rate question," the speaker concluded; "surely there is a better way to encourage industrial expansion than to advertise disunity and predict disaster." To this end he suggested that "the shippers and receivers who pay the freight bills, the railroads which are being branded as enemies of the South, and those in public office who are keeping this agitation alive, get together and agree to take this technical squabble out of politics, out of the press, and relegate it for solution to the rate experts who understand what it's all about and to the government's Interstate Commerce Commission whose 50-year record as a fair and impartial court insures justice to all."

Speaking to the Rotary Club at Knoxville, Tenn., on October 3, Mr. Norris praised the shippers and receivers of freight for the part they have played in enabling the railroads to deal successfully with war traffic. Taking a conservative view as to the railroads' post-war earnings' prospects (because of high wages and taxes and the revival of competition from other transport agencies), the speaker nevertheless expressed optimism based on his belief that "we can count on the loyal, wholehearted support of the nation's shippers."

New Rail Director in Buffalo Branch of O. D. T.

John D. Gallery, of Philadelphia, succeeded George D. Kennedy as district rail director in the Buffalo office of the Division of Railway Transport, Office of Defense Transportation. The latter is expected to return to the Delaware, Lackawanna & Western. Prior to his new appointment, Mr. Gallery has been assistant eastern director in charge of merchandise in the O. D. T.'s Philadelphia office.

O. P. A. Opposes Restoration of Ex Parte 148 Increases

Opposition of the Office of Price Administration to the restoration of the Ex Parte 148 freight rate increases sought by the railroads was expressed in an October 10 announcement which revealed that price-control agency has again retained Max Swiren of Levinson, Becker, Peebles & Swiren, Chicago, as its special counsel for the proceeding. Meanwhile the American Short Line Railroad Association has filed with the Interstate Commerce Commission a motion asking, like the Class I roads, for reinstatement on next January 1 of the increases which have been under suspension May 15, 1943. The commission has set the case for hearing in Washington, D. C., on October 23.

The O. P. A. announcement recalled how that agency was previously represented by Mr. Swiren in the suspension proceedings "that were instituted by O. P. A. and which brought about reductions in railroad freight rates amounting to about $350,000,000 annually." It also noted that in opposing the restoration O. P. A. will speak for the Office of Economic Stabilization, too; for the proposed increases "are regarded as unjustifiable in view of the extraordinarily high level of railroad earnings and the adverse effect of freight rate increases on the national stabilization program."

The Shore Line Association's motion for restoration was made without prejudice to the right of any of its member roads to make such further applications for increases as changes in circumstances and conditions may require. It asserts that short-line wage costs have increased more than 30 per cent since 1940, or relatively more than on Class I roads. Likewise are costs of materials and supplies up further, for the short lines do not buy in quantities which give them the same discounts as are enjoyed by larger roads.

The petition also points out that the short lines generally have not experienced the unprecedented wartime traffic increases which have come to the Class I roads. This is because curtailment of civilian production deprived them of normal business, while wartime routing restrictions have barred them from participation in the hauling of much war traffic. Other factors mentioned include deferred maintenance which must

News Department continued on next left-hand page

MORE POWER ... FOR SOO LINE 4-8-4's

Franklin Type "E" BOOSTERS GIVE INCREASED CAPACITY

The Soo Line has applied Franklin Type E Boosters to its 5000 Class 4-8-4 locomotives and thereby gained a substantial increase in capacity.

The additional power provided by the Franklin Booster permits the hauling of heavier trains over the severe grade out of Minneapolis.

On the road the Booster aids the locomotive in maintaining its schedule by furnishing extra power to move in and out of sidings, to accelerate quickly to road speed, and for other grades and tight spots.

These advantages can be secured by any railroad through the application of Franklin Type E Boosters to its locomotives.

FRANKLIN RAILWAY SUPPLY COMPANY, INC.
NEW YORK • CHICAGO
In Canada: FRANKLIN RAILWAY SUPPLY COMPANY, LIMITED, MONTREAL

be made up, and the inability to build financial reserves under present tax-law provisions. Unless rates are adjusted to bring more revenue, the argument adds, the short lines "will have their ability to provide adequate transportation service seriously impaired." Also, the motion adopts in general the statement of the Class I roads, which was noted in the *Railway Age* of October 7, page 556.

British Railways Look for Extended Air Services

British railways, having been in the air business since the early 30's, are now "making a bold bid for an extension of civil air traffic after the war," stated T. D. Slattery, general traffic manager, British Railways, recently, in New York.

Today, he said, British railways are financially interested in 16 air companies, though restricted services are operated by five of these firms only, others contributing aircraft personnel and equipment. Despite restricted routes and services, the air companies associated with the railways have, since June, 1940, operated nearly 6,000,000 aircraft miles and carried over 200,000 passengers, as well as over 5½ million pounds of urgent mail and freight.

As to post-war developments, suggests Mr. Slattery, the railways believe that comprehensive air services, both within the British Isles and to the Continent, are intimately linked. It is proposed, he said, to establish a complete series of air services connecting the principal cities of the British Isles with every part of the continent west of a line drawn from Stockholm to Budapest, and this without subsidy.

There is considerable discussion on the subject of air services, Mr. Slattery said. He spoke of G. Elliot, a director of Railway Air Services and deputy general manager of the Southern Railway, whose view it is that the public must pay for speed, in order that the railways' ships and trains would not be subsidizing the air services. Mr. Elliot holds, too, he said, that tickets should be issued on an interavailability basis, so that a traveler could go out by plane and return by ship if desired. And, his answer to those who have expressed fear at the railways' interest in air transportation was that, "People said we went into road transport to strangle it. That was ridiculous. We invested money in bus companies and we fitted road and rail together. We now want to fit air travel with train and steamship and give the public the best in transportation."

Elkins Act Violation

The Interstate Commerce Commission has made public advice it has received that on September 18 Charles Crews, an agent of the Meridian & Bigbee River, and certain shippers entered a plea of guilty to indictment on five counts charging violation of the Elkins Act. It was charged that Crews, as agent, granted and gave to the defendant shippers concessions with respect to the transportation of carload shipments of lumber from stations on the line of the railroad to various interstate points. The irregularities were accomplished by showing on the bills of lading false points of origin in order to obtain rates which were lower than were in effect from the true point of origin. Each defendant was fined $1,000 on each count, but sentence was suspended with respect to four of the five counts, and upon payment of $25 by Crews and $250 each by the others sentence was suspended as to the fifth count, all defendants being put on probation for 30 days. The case was investigated by the commission's Bureau of Inquiry.

September Employment 4.01 Per Cent Above September, 1943

Railroad employment decreased 1.43 per cent—from 1,448,548 to 1,427,833—during the one-month period from mid-August to mid-September, but the September total was 4.01 per cent above September, 1943, according to the latest summary of preliminary reports prepared by the Bureau of Transport Economics and Statistics of the Interstate Commerce Commission. The index number, based on the 1935-1939 average and adjusted for seasonal variation, was 136.6 for September as compared with August's 139, and September, 1943's 131.3.

September employment was below that of August in all groups except train and engine service, which was up 0.34 per cent. The decreases ranged from 0.15 per cent for yardmasters, switch-tenders and hostlers to 4.09 per cent for the maintenance of way and structures group. Meanwhile, all groups were above September, 1943, the range being from 0.72 per cent for train and engine service to 8.9 per cent for maintenance of way and structures.

Club Meetings

The Anthracite Valley Car Foreman's Association will next meet October 16, at 6:30 p.m., in the American Legion Home, Parsons, Pa. A special feature will be the showing of pictures of the 1944 annual clam bake, these through the courtesy of Frank Finsthwait, of Oxweld Railroad Service, and John Brown, of the Chicago Pneumatic Tool Company.

The annual meeting and election of officers of the Railway Club of Pittsburgh is scheduled for 8 p. m., October 26 at the Fort Pitt hotel. There will be a smoker and entertainment.

The Western Railway Club will hold its fall meeting at the Hotel Sherman, Chicago, on October 16. The meeting, designated "Executives Night," will be addressed by A. N. Williams, president of the Western Union Telegraph Company.

RADIO-EQUIPPED RAIL CAR.—The special car of Brig. Gen. Carl R. Gray, Jr., director general, Military Railway Service, is radio-equipped, so that while he is on the road he can keep constantly informed of happenings at his headquarters. All confidential messages are sent in code, and are deciphered on a special machine at the other end of the line. Operators use the standard army phonetic alphabet in pronouncing each letter. A typical message is likely to read: "Able baker fox uncle Charlie easy sugar queen love Roger".

Supply Trade

Lawrence E. Cooney, district sales manager, has been appointed vice-president and general sales manager of the **Austin Company.**

John W. Sands, who has been with the conservation division of the War Production Board at Washington, D. C., since January, 1942, has resumed his duties with the development and research division of the **International Nickel Company,** New York.

E. R. Jacobsen, New York divisional sales manager of the **National Battery Company** has been promoted to the newly-created position of Eastern division railway sales manager with jurisdiction over all sales of Gould railroad batteries in the East and has been succeeded by **W. W. Halsey,** sales engineer at New York. Mr. Jacobsen, upon completion of his electrical education at Newark College of Engineering, entered the employ of the Western Electric Company and a year later joined the sales department of the storage battery division of Thomas A. Edison, Inc., with which he was associated until 1931. At that time he joined the sales department of the Gould organization where until his recent promotion he has been a sales representative.

E. R. Jacobsen

Herbert B. Lewis has been appointed manager, machinery division, of the **Lukens Steel Company** and its subsidiaries, By-Products Steel Corporation and Lukenweld, Inc. Mr. Lewis had been associated with the Brown & Sharp Manufacturing Co., Providence, R. I., for the past 25 years.

Harold A. Hintz has been appointed district manager, west coast territory, for the **H. K. Porter Company** of Pittsburgh, Pa., and subsidiaries, with headquarters in the company's newly-opened offices at 849 Petroleum Building, Los Angeles, Cal. Mr. Hintz attended the University of Chicago and began work with Shattuck & Hussey, architects, and the Packard Motors Company. In 1925 he established an industrial property management firm, the Harold

News Department continued on next left-hand page

Complete ARCHES

ARE EASIER ON THE COAL PILE!

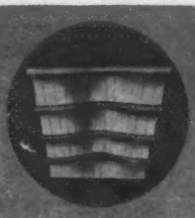
The railroads have to haul every ton of coal they burn.

With transportation operations at capacity it becomes doubly important to conserve every ton of locomotive fuel.

Experience has proved that only with a complete locomotive arch can maximum fuel economy be realized.

HARBISON-WALKER REFRACTORIES CO.

Refractory Specialists



AMERICAN ARCH CO.

INCORPORATED

60 EAST 42nd STREET, NEW YORK, N. Y.

Locomotive Combustion Specialists

Hintz Company, in Los Angeles. Recently he has represented the Axelson Manufacturing Company, Los Angeles, as field sales engineer.

Richard J. Shanahan has been oppointed field sales manager of the railroad equipment division of the **U. S. Engine & Pump**

Richard J. Shanahan

Co., Batavia, Ill., which has opened its new Chicago office in the Field Building, 135 South LaSalle Street. Before joining the U. S. Engine & Pump Co., Mr. Shanahan was employed for 4 years with the Gustin-Bacon Manufacturing Company, and, prior thereto, with the Maintenance Equipment Company and the Boss Bolt & Nut Co.

M. A. Cornish, superintendent, has been appointed in full charge of the Carbondale, Pa., plant and office of the **American Welding Company,** wholly-owned subsidiary of the American Car & Foundry Co. Mr. Cornish joined the plant in February, 1916 and was appointed assistant superintendent in 1921 and superintendent in 1932.

W. H. Horsch, sales engineer of the **Union Switch & Signal Company** at Chicago, has been promoted to assistant

W. H. Horsch

district manager with the same headquarters. Mr. Horsch was born in Fulton, Ill., in 1897, and studied electrical engineering at the University of Cincinnati and the Carnegie Institute of Technology, graduating in 1923. Immediately after graduation, he entered the apprentice course of the Union Switch & Signal Company, at Swissvale, Pa., and upon completion of the course, he was transferred to the Chicago office of the company where he was employed as sales engineer until his recent promotion to assistant district manager.

L. J. Henderson has been appointed assistant general sales manager, and **Gene P. Robers,** sales promotion manager, for the **Weatherhead Company,** Cleveland, Ohio. Mr. Henderson has been assistant manager of the aviation sales division since 1938 and Mr. Robers, who joined Weatherhead in 1942, has directed the company's advertising activities since that time.

E. M. Hendrickson has been appointed chief engineer for the **Paxton-Mitchell Company,** Omaha, Neb. Mr. Hendrickson formerly served with the Union Pacific, the Chicago & North Western and the T-Z Railway Supply Equipment Company before joining Paxton-Mitchell 11 years ago. In recent years he has covered the central states for the company, with headquarters in Chicago.

William W. Greenway has been appointed production engineer for the **Mount Vernon Car Manufacturing Company** and the **J. P. Devine Manufacturing Company,** divisions of the H. K. Porter Company of Pittsburgh, Pa. Mr. Greenway formerly was associated with the Austin-Western Company as production specialist. Prior thereto he had served as industrial specialist with the War Production Board and for eight years in various capacities from machine operator to manager of production with the LaPlant-Choate Manufacturing Company of Cedar Rapids, Iowa.

The Pullman-Standard Car Manufacturing Company on October 3, filed a suit in the Federal District Court at Chicago for $500,000 damages against the Defense Plants Corporation. The suit sets forth that the corporation contracted to take over Pullman-Standard buildings in Hammond, Ind., for a new extruded aluminum castings plant on September 17, 1943, and retained possession of the properties until March 6, 1944, altering and razing buildings and making other changes. It is alleged the contract provided for return of the property to its original condition in the event the purchase was not culminated, but that the plant, which was to have been operated by Phelps-Dodge corporation of New York, was abandoned when aluminum plant capacity was found to be sufficient for war needs.

L. B. Westfall, manager of the Columbus, Ohio, office of the **Graybar Electric Company,** has been transferred to Cincinnati, Ohio, as Ohio Valley district manager with jurisdiction over offices and warehouses in Nashville, Tenn., Louisville, Ky., and Columbus and Dayton, Ohio. **C. E. Furber,** supply sales manager in the Minneapolis, Minn., district, has been appointed manager at Columbus to succeed Mr. Westfall. **G. T. Marchmont,** southern district manager, has been appointed southwestern district manager for Graybar with headquarters in Dallas, Tex., to succeed **M. A. Buehler,** who is retiring on a service pension. Mr. Marchmont will have jurisdiction over Graybar offices and warehouses in Houston, San Antonio, Corpus Christi, Fort Worth and Beaumont, Tex., and New Orleans, La. **W. E. Henges,** St. Louis, Mo., district manager, has been appointed Erie district manager in Cleveland, Ohio, to succeed **A. L. Perry,** who also is retiring on a service pension. Mr. Henges will have jurisdiction over offices and warehouses in Toledo and Akron, Ohio, as well as in Cleveland. **R. W. Kimberlin,** manager in the Salt Lake City, Iowa, territory, has been transferred to St. Louis, Mo., as Mississippi Valley district manager with jurisdiction over the offices and warehouses in Memphis, Tenn., and in St. Louis. **V. K. Stalford** has been appointed district merchandising manager in Detroit, Mich., to succeed **J. P. Wear, Jr.,** whose appointment as Graybar district merchandising manager with headquarters in Philadelphia, Pa., was reported in the *Railway Age* of October 7. The Detroit district also includes offices and warehouses in Flint and Lansing, Mich.

Equipment and Supplies

LOCOMOTIVES

The MISSOURI PACIFIC has ordered two 5,400-hp. Diesel-electric freight locomotives from the Electro-Motive division of the General Motors Corporation; three 1,000-hp. Diesel-electric switchers from the Baldwin Locomotive Works and two 1,000-hp. Diesel-electric switchers from the American Locomotive Company.

IRON AND STEEL

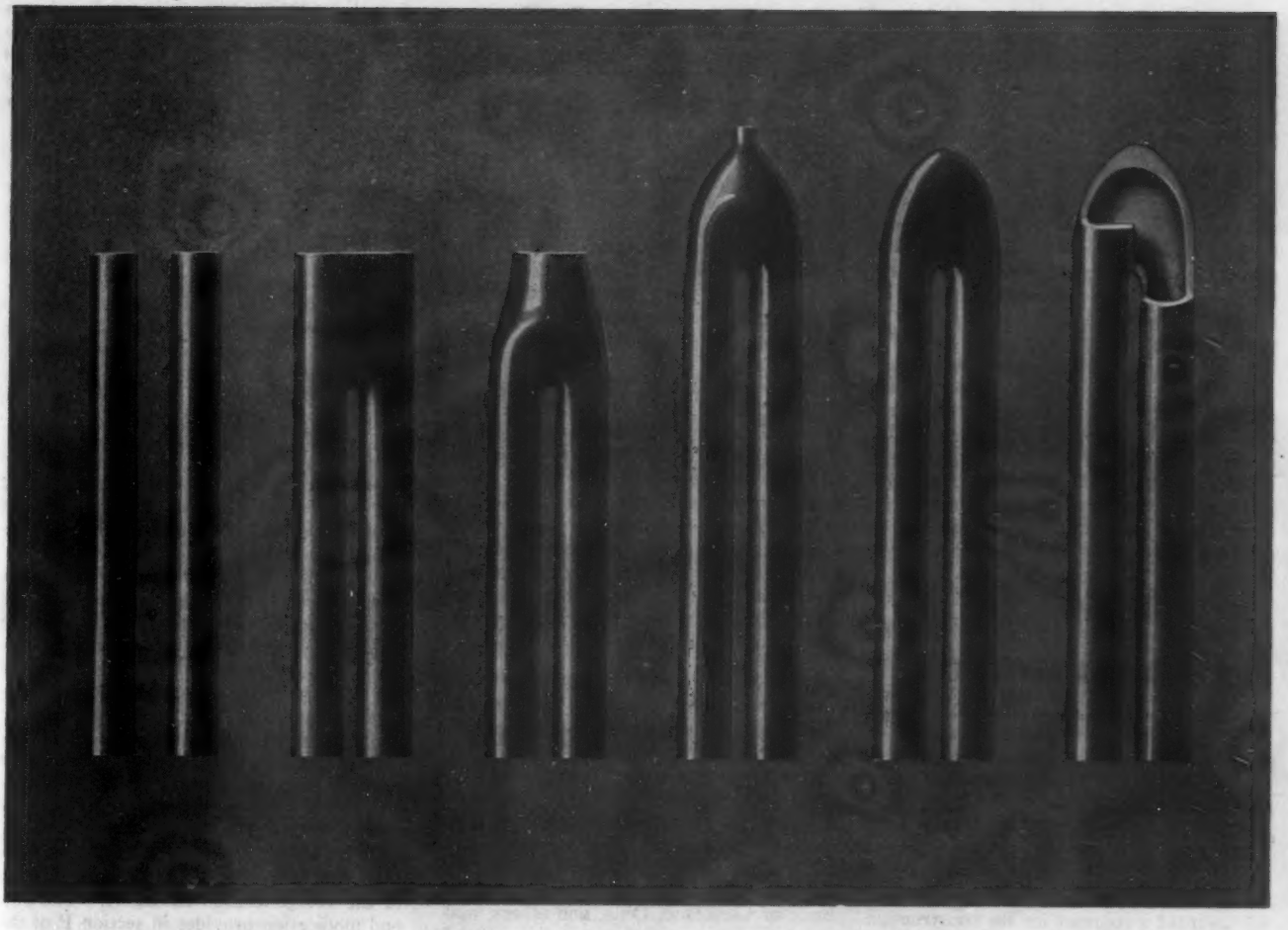
The LEHIGH & NEW ENGLAND has ordered 792 tons of rail from the Bethlehem Steel Company.

SIGNALING

The SPOKANE, PORTLAND & SEATTLE has ordered from the General Railway Signal Company equipment for a relay interlocking at Willbridge, Ore. Included in the order are 3 type SA high signals, 2 type SA dwarf signals, 3 model 5C switch machines, and a desk type control machine with 2 rotary signal levers and 2 rotary switch levers with indication lights.

The MINNEAPOLIS, ST. PAUL & SAULT STE. MARIE has ordered equipment from the General Railway Signal Company to provide for unit wire remote control of two switch layouts, located about five miles apart, at the ends of Marshfield yard, Marshfield, Wis. The order includes a desk type control machine with a 22 by 12 in. panel and 4 working levers, 2 type SA searchlight signals, 2 type ME dwarf signals, 2 model 5D dual control switch ma-

News Department continued on next left-hand page



Machine-die-forging . . .

is used in the re-manufacture of old Superheater Units . . . the same as is used in the manufacture of new units.

Standardize on the Elesco Service for the re-manufacture of old Superheater Units — It is both dependable and economical.

A-1678

THE SUPERHEATER COMPANY

SUPERHEATERS • FEEDWATER HEATERS
AMERICAN THROTTLES • STEAM DRYERS
EXHAUST STEAM INJECTORS • PYROMETERS

Representative of
AMERICAN THROTTLE COMPANY, INC.
60 East 42nd Street, NEW YORK
122 S. Michigan Blvd., CHICAGO
• • •
Montreal, Canada
THE SUPERHEATER COMPANY, LTD.

chines, type B plug-in relays, and type BT116 and BX116 rectifiers. The control machine has extra panel space for the control of signals at the adjacent crossing of the Chicago & Northwestern, should such an installation be considered desirable.

The Southern Pacific has placed an order with the Union Switch & Signal Co. for materials to install centralized traffic control on the Salt Lake division between Lemay, Utah, and Bridge, a distance of 53 miles. The control machine is to be located at Ogden, Utah, 30 miles east of the beginning of the controlled territory. The western half of this controlled signal system will be handled by coded carrier control, superimposed on the two-wire code line. In addition to the code equipment, the order includes searchlight signals, style M-22A dual-control switch layouts, electric locks, relays, rectifiers and housings. The field installation will be performed by the railroad company's signal construction forces.

Construction

Baltimore & Ohio.—This railroad has awarded a contract for the reconstruction of its bridge at Washington, Ind., at estimated cost of $64,500, to George Vang, Inc., Pittsburgh, Pa.

Central of New Jersey.—This railroad has awarded a contract for the construction of 10 thawing pits at Pier 18, Jersey City, N. J., at estimated cost of $20,325, to the Linde-Griffith Construction Company of Newark, N. J.

Illinois Central-Louisville & Nashville.—In a proposed report, Examiner R. Romero has recommended that the Interstate Commerce Commission approve the construction by the Chicago, St. Louis & New Orleans (controlled by the Illinois Central by stock ownership) and the Louisville & Nashville, and operation by the latter and the I. C., of a joint line from a point near Central City, Ky., to Drakesboro, about 8 miles, or, in the event the L. & N. is unwilling to participate in such an arrangement, that the I. C. and its subsidiary be authorized to carry out the project. The line would serve a large coal producing area not now entered by any railroad. In a separate application, the L. & N. has asked authority to build a 2.1-mile branch from Drakesboro into the same area, and, as noted in *Railway Age* of October 7, page 564, has been authorized to do so on condition that, if the commission should so order, it will participate in the joint construction and operation which the examiner has now recommended. The L. & N. had expressed preference for independent operation and had argued that one line would be capable of handling all coal produced in the area, but the examiner held that the new mines contain sufficient tonnage to supply more than one road and that the producers would benefit by access to the wider markets that would thus be made available.

Financial

Alabama, Tennessee & Northern.—*Reorganization.*—Division 4 of the Interstate Commerce Commission has authorized the Alabama, Tennessee & Northern Railroad *Company* to acquire the property of the *corporation* of that name, thus consummating the plan of reorganization under the provisions of section 77 of the Bankruptcy Act which has been approved by the commission and the court. The capitalization of the new company is to include $1,718,700 of series A 4½ per cent general mortgage income bonds, and 15,937 shares of no-par common stock. A 15-year 4 per cent contingent interest note will be issued to the Reconstruction Finance Corporation, with $347,625 of general mortgage bonds and an equal amount of stock (stated value, $100 per share) to be pledged as collateral. In addition, the approved plan contemplated a $261,797 issue of first mortgage bonds to meet cash requirements, but no provision for this issue has been made in the present report and order.

Chesapeake & Ohio.—*Equipment Trust Certificates.*—Division 4 of the Interstate Commerce Commission has authorized this company to assume liability for $2,200,000 of fifth equipment trust of 1944 1¼ per cent equipment trust certificates in connection with the purchase of ten 2-6-6-6 type freight locomotives with 25,000-gal. tenders at a total cost of about $2,811,828. The issue has been sold at 99.807 to the National City Bank of Cleveland, Ohio, and others, making the average annual cost to the road 1.79 per cent. The division pointed out that this carrier in the six months ended with May had purchased for cash $9,660,000 of equipment and will be required to expend some $5,136,000 in cash on down payments in connection with this and other purchases of equipment under equipment trust agreements. The road's cash payments in 1945 on 1944 federal income taxes will be about $44,000,000 because of inability to take a current credit for the post-war refund.

Chicago, Milwaukee, St. Paul & Pacific.—*Reorganization Plan.*—The Federal District Court at Chicago, on October 7, authorized trustees of the Chicago, Milwaukee, St. Paul & Pacific to publish details of a reorganization plan approved by the Interstate Commerce Commission. Publication will be in 16 eastern, midwestern and far western newspapers on the weeks starting October 9 and 16. After the second publication the plan must be submitted to nine groups of mortgage and bondholders. Only those who held securities of record on September 30, 1944 are eligible to vote on acceptance or rejection of the plan and all persons and groups voting must file their votes with the I. C. C. before November 29, 1944.

Erie.—*Bonds.*—Division 4 of the Interstate Commerce Commission has authorized this company to issue $13,000,000 of series E first consolidated 3¼ per cent bonds, sold at 99.159 to the First Boston Corporation and others, the average annual cost to the carrier being about 3.31 per cent. The proceeds, with other funds, are to be employed to redeem $13,385,000 of outstanding bonds (previous item in *Railway Age* of September 16, page 458). An overall saving of $280,623 is expected to result from the transaction, in addition to a current income tax saving of about $356,172.

Missouri Pacific.—*Union Railway Note.*—Division 4 of the Interstate Commerce Commission, upon request filed on behalf of the Union Railway Co. (Memphis, Tenn.), the stock of which is owned by the Missouri Pacific, has dismissed without prejudice that company's application for authority to issue a promissory note for $987,406. The application was submitted November 5, 1943, and contemplated a note, to be due in six months, as evidence of advances made to the subsidiary by the parent road.

Missouri Pacific.—*Reorganization.*—Acting upon petitions of interested parties, the Interstate Commerce Commission has issued its third supplemental report in this road's reorganization proceeding, further modifying the approved plan of reorganization. Other than "minor corrections and clarifications" of its report and order of July 4, 1944, only two modifications are made. In section U of the plan, wherein the protective committee for Missouri Pacific first and refunding mortgage bonds is given the right of designation of five members of the panel of nominees for the first board of directors, the commission has substituted for the protective committee, the group of institutional holders of the bonds, and approves a similar substitution in section V with respect to designation of two of the reorganization managers. The second modication provides in section P of the plan that the preferred stock, voting as a class, shall have the right to elect not less than two directors after default of the equivalent of six quarterly dividends and that the affirmative vote of the holders of at least two-thirds of such stock shall be required as a prerequisite to any charter or bylaw amendment altering materially any existing provision of such stock. Commissioner Miller, dissenting in part, objected to the denial of petitions for the issuance of warrants to stockholders. Commissioner Porter did not participate.

St. Louis-San Francisco.—*Interest Payment.*—The Federal District court at St. Louis, Mo., has authorized trustees of the St. Louis-San Francisco to pay $12,512,472 in overdue interest on three bond issues. The following payments will be made for each $1,000 denomination: Ft. Scott bonds, $125.29; prior lien bonds, series A, $36.05; series B, $38.42; consolidated bonds, series A, $38.80; and series B, $42.68.

Pennsylvania.—*Leased Lines Refinanced.*—On October 10 an investment banking syndicate headed jointly by Kidder, Peabody & Co. and Drexel & Co. was awarded the $23,735,000 issue of general mortgage 3⅝ per cent bonds, series E, of the Pittsburgh, Cincinnati, Chicago & St. Louis on a bid of 101.0201. The bonds were reoffered for sale to the public at 102, a yield of 3.27 per cent. On the same day the $11,000,000 issue of general and refunding mortgage bonds, series C, of the Cleveland & Pittsburgh was awarded to Auchin-

News Department continued on next left-hand page

Railroads Have CONFIDENCE

— IN —

HSGI *Quality*

The close-grained uniformity of HSGI castings makes for faster machining. Because they are manufactured close to finished sizes, less removal of stock is necessary. Machining is done at maximum speeds with no danger to cutting tools.

SHOP material platforms like the one above testify to the railroads' confidence in the wear-resisting quality of HUNT-SPILLER *Air Furnace* GUN IRON to keep locomotives in there "punching". Complete applications of HSGI parts on your power will help deliver maximum mileage with greater fuel economy and fewer lay-ups. The more you use, the greater the savings.

HSGI
Reg. U. S. Trade Mark

Cylinder Bushings
Cylinder Packing Rings
Pistons or Piston Bull Rings
Valve Bushings
Valve Packing Rings
Valve Bull Rings
Crosshead Shoes
Hub Liners
Shoes and Wedges
Floating Rod Bushings

Finished Parts

Dunbar Sectional Type Packing
Duplex Sectional Type Packing
for Cylinders and Valves
(Duplex Springs for Above
Sectional Packing)
Cylinder Snap Rings
Valve Rings, All Shapes
Light Weight Valves
Cylinder Liners and Pistons
for Diesel Service

HUNT-SPILLER MFG. CORPORATION

N. C. Raymond, *President* — E. J. Fuller, *Vice-Pres. & Gen. Mgr.*

Office & Works

383 Dorchester Ave. — South Boston 27, Mass.

Canadian Representative: Joseph Robb & Co., Ltd., 5575 Cote St. Paul Rd., Montreal, P. Q.
Export Agent for Latin America:
International Rwy. Supply Co., 30 Church Street, New York, N. Y.

HUNT-SPILLER GUN IRON

Air Furnace

closs, Parker & Redpath on a bid of 100.45 for a 3 per cent interest rate. It was reported that these bonds would be sold privately. Both the Pittsburgh, Cincinnati, Chicago & St. Louis and the Cleveland & Pittsburgh bond issues are guaranteed unconditionally by the Pennsylvania as to principal, interest, and sinking fund payments. The sales are subject to authorization by the Interstate Commerce Commission. (Previous item in *Railway Age* of September 30, page 532.)

ST. LOUIS-SAN FRANCISCO.—*Reorganization.*—The Interstate Commerce Commission has denied a petition filed by this company, in the process of reorganization under section 77 of the Bankruptcy Act, for further modification of the plan of reorganization approved by the commission (reviewed in *Railway Age* of July 22, page 160). The petition alleged that the commission was in error in 21 particulars in its plan, but its contentions were held to be without merit by the commission. Commissioners Porter and Miller did not participate in the disposition of the petition.

WABASH.—*Refinancing.*—This company has applied to the Interstate Commerce Commission for authority to issue $47,000,000 of series B first mortgage bonds, the interest rate to be determined by competitive bidding. As noted in this column in the October 7 issue, page 567, the proceeds will be employed to retire at 101½ $47,354,300 of series A first mortgage bonds outstanding.

WEST FELICIANA.—*Issue of Securities.*—The Interstate Commerce Commission, Division 4, has authorized this company to issue 650 shares of capital stock of $100 par value and three 3 per cent promissory notes, payable one, two, and three years after date to the Louisiana & Arkansas. These financing arrangements are in compliance with conditions imposed by the commission's recent order authorizing the W. F. to purchase an L. & A. branch. (See *Railway Age* of September 2, page 391.) The present report imposes another condition requiring that the authority it grants be not exercised until $5,000 of stock and $45,000 of notes issued without commission authority are recalled and canceled.

Average Prices Stocks and Bonds

	Oct. 10	Last week	Last year
Average price of 20 representative railway stocks..	41.79	40.72	36.86
Average price of 20 representative railway bonds..	89.83	89.32	79.37

Dividends Declared

Akron, Canton & Youngstown.—5% preferred, $2.50, semi-annually, payable October 2 to holders of record September 15; 5% preferred accum., $5.00, payable October 2 to holders of record September 15.

Piedmont & Northern.—50¢, quarterly, payable October 20 to holders of record October 5.

Abandonments

KANSAS CITY SOUTHERN.—This road has been authorized by the Interstate Commerce Commission to abandon a 3.8-mile branch line extending in a northeasterly direction out of Chat Junction, in Jasper County, Mo.

Railway Officers

EXECUTIVES

Edward Darlington Cotterell, whose appointment as vice-president and general manager, Eastern lines, of the Canadian

Edward D. Cotterell

Pacific, with headquarters at Toronto, Ont., was announced in the *Railway Age* of October 7, was born on January 26, 1881, in England. He entered railway service in 1897 as a messenger in the telegraph department of the Canadian Pacific at Montreal, Que., and in 1898 went to Western Canada as an operator. Later in 1898 he joined the New York Central as an operator, becoming chief train dispatcher of the Hudson division in 1910. Mr. Cotterell remained with the New York Central until 1913, when he rejoined the Canadian Pacific at Winnipeg, Man., where he served successively as superintendent of car service and superintendent of transportation. In 1928 he was appointed general superintendent of the Manitoba district, being transferred to the Saskatchewan district, with headquarters at Moose Jaw, Sask., late in 1932, and to the Alberta district, with headquarters at Calgary, Alta., in 1933. On October 24, 1942, Mr. Cotterell was appointed acting assistant general manager of the Eastern lines at Toronto, and the following November he was advanced to general manager, Eastern lines, at Toronto, the position he was holding at the time of his recent promotion to vice-president and general manager.

Ben H. Brown, whose appointment as assistant to the vice-president-traffic of the Atlantic Coast Line with headquarters at Wilmington, N. C., was announced in the September 23 issue of *Railway Age,* was born at Pittsburgh, Pa., on September 29, 1899. He entered railroad service with the Atlantic Coast Line on February 1, 1918, and, after serving as secretary to the freight traffic manager and to the assistant freight traffic manager at Wilmington, he was advanced to secretary to the vice-president-traffic there on January 1, 1922. He remained in this position until January 1, 1929, when he became assistant chief clerk, freight traffic department, and the following March he was promoted to chief clerk, service and solicitation department. On August 10, 1934, he was named commercial agent at Florence, S. C., and was transferred to Atlanta, Ga., July 1, 1936. In November of the following year Mr. Brown assumed the position of general agent at Atlanta and was serving in this capacity when he became assistant to the freight traffic manager at Wilmington in August, 1939. He was advanced to assistant general freight agent at Columbia, S. C., on November 16, 1940, and remained in this position until his recent appointment as assistant to vice-president-traffic at Wilmington.

C. I. Leiper, chief engineer of the Central region of the Pennsylvania at Pittsburgh, Pa., has been promoted vice-president with the same headquarters.

James M. Carry, assistant vice-president of the Pullman Company, has been elected a vice-president, with headquarters as before at Chicago. He will be assigned to the operating department of the company. Mr. Carry was born at Chicago and in 1930 he was graduated from Cornell University. In the same year he went with

James M. Carry

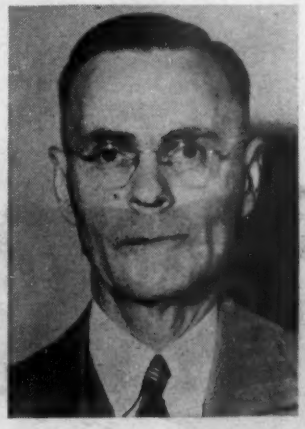
the Pullman Company as a stenographer in the office of the president, and later he served as assistant secretary and assistant treasurer. In 1936 Mr. Carry was promoted to assistant to the vice-president in charge of the operating department at Chicago, and in January, 1943, he was advanced to assistant vice-president, with the same headquarters, the position he held at the time of his election to vice-president.

FINANCIAL, LEGAL AND ACCOUNTING

W. W. Wells, assistant secretary of the Pennsylvania at Philadelphia, Pa., has resigned after 52 years' service.

Edward J. Johnson, auditor of passenger and station accounts of the Northern Pacific, has been promoted to assistant general auditor, revenues, with headquarters as before at St. Paul, Minn. **Paul R. Carlton,** assistant auditor of passenger and station accounts at St. Paul, has been advanced to auditor of freight accounts, succeeding **A. L. Wielde,** deceased. **R. L. Fulton**

has been appointed auditor of passenger and station accounts, with headquarters as before at St. Paul, replacing Mr. Johnson, and **Carl Pace** has been appointed assistant auditor of freight accounts, with headquarters as before at St. Paul. Mr. Johnson was



Edward J. Johnson

born in Sweden on September 11, 1882, and entered railway service with the Northern Pacific on September 23, 1899, as a clerk of the auditor of receipts at St. Paul, his subsequent service being with the same headquarters. On May 1, 1912, he was advanced to assistant chief clerk, and on March 16, 1918, he was promoted to chief clerk. On March 1, 1923, Mr. Johnson was advanced to auditor of passenger receipts, and on July 16, 1935, he was promoted to auditor of passenger and station accounts, the position he held at the time of his new appointment.

Paul R. Carlton, whose promotion to auditor of freight accounts of the Northern Pacific, with headquarters at St. Paul, Minn., was reported in the *Railway Age* of October 7, was born at St. Paul on June 14, 1893, and entered railway service on October 1, 1909, as a clerk of the Northern Pacific at St. Paul. He subsequently held several minor positions until 1919 when he was advanced to traveling auditor, with

Paul R. Carlton

headquarters at St. Paul. On September 1, 1925, Mr. Carlton was appointed assistant chief clerk of the auditor of agencies and on May 1, 1935, he was advanced to chief clerk. On October 1, 1940, he was promoted to assistant auditor of passenger and station accounts, with the same headquarters, the position he held at the time of his new appointment.

George W. Thompson, assistant chief clerk of the auditor of disbursements of the Erie, with headquarters at Cleveland, Ohio, has been promoted to assistant auditor of disbursements, with the same headquarters.

D. G. Christen, assistant land commissioner of the Southern Pacific at San Francisco, Cal., has been promoted to land commissioner, with the same headquarters, succeeding **Turner McAllaster,** whose death on September 28 is reported elsewhere in these columns.

J. A. Barnhart has been appointed auditor freight and passenger revenue of the Bessemer & Lake Erie at Pittsburgh, Pa., succeeding **C. W. Champion,** who has retired after 33 years of railroad service.

C. R. Blakney, paymaster of the Canadian National, Atlantic region, has been appointed regional treasurer of that region with headquarters as before at Moncton, N. B., succeeding **H. K. Goodwin,** who has retired after 52 years' service. **Leonard Barnes,** assistant paymaster at Montreal, Que., has been advanced to succeed Mr. Blakney as paymaster at Moncton.

OPERATING

Harry R. Howard, road foreman of the Chicago & Illinois Midland at Springfield, Ill., has been promoted to trainmaster, with the same headquarters.

W. L. Wilson, assistant division superintendent of the Canadian Pacific at Calgary, Alta., has been promoted to superintendent of the Medicine Hat division, with headquarters at Medicine Hat, Alta., succeeding **R. C. Wheeler,** who has been granted leave of absence because of illness.

H. T. Walton has been appointed terminal trainmaster of the Canadian National at Windsor, Ont., succeeding **E. B. Ryerson,** who has been promoted to assistant superintendent with headquarters at Palmerston, Ont. Mr. Ryerson replaces **T. J. Wrennick,** who has retired.

W. D. Lamprecht has been appointed assistant superintendent of the San Joaquin division of the Southern Pacific, with headquarters at Bakersfield, Cal., succeeding **H. W. Hall,** who has been transferred to the Coast division, with headquarters at San Francisco, Cal.

Carl E. Dorfler, trainmaster of the Tacoma division of the Northern Pacific at Centralia, Wash., has been promoted to assistant superintendent of the Rocky Mountain division, with headquarters at Livingston, Mont., succeeding **Frank G. Cook,** who has been granted a leave of absence to enter military service.

N. R. Crump, general superintendent of the Ontario district of the Canadian Pacific at Toronto, Ont., has been appointed assistant general manager with the same headquarters. **D. S. Thomson,** superintendent, New Brunswick district, at Brownville Junction, Me., succeeds Mr. Crump as general superintendent of the Ontario district.

Mr. Crump was born on July 30, 1904, at Revelstoke, B. C., and received his B. S. and M. E. degrees from Purdue University, Lafayette, Ind. He entered railroad service in 1920 as a machinist's apprentice for the Canadian Pacific at Field, B. C., trans-

N. R. Crump

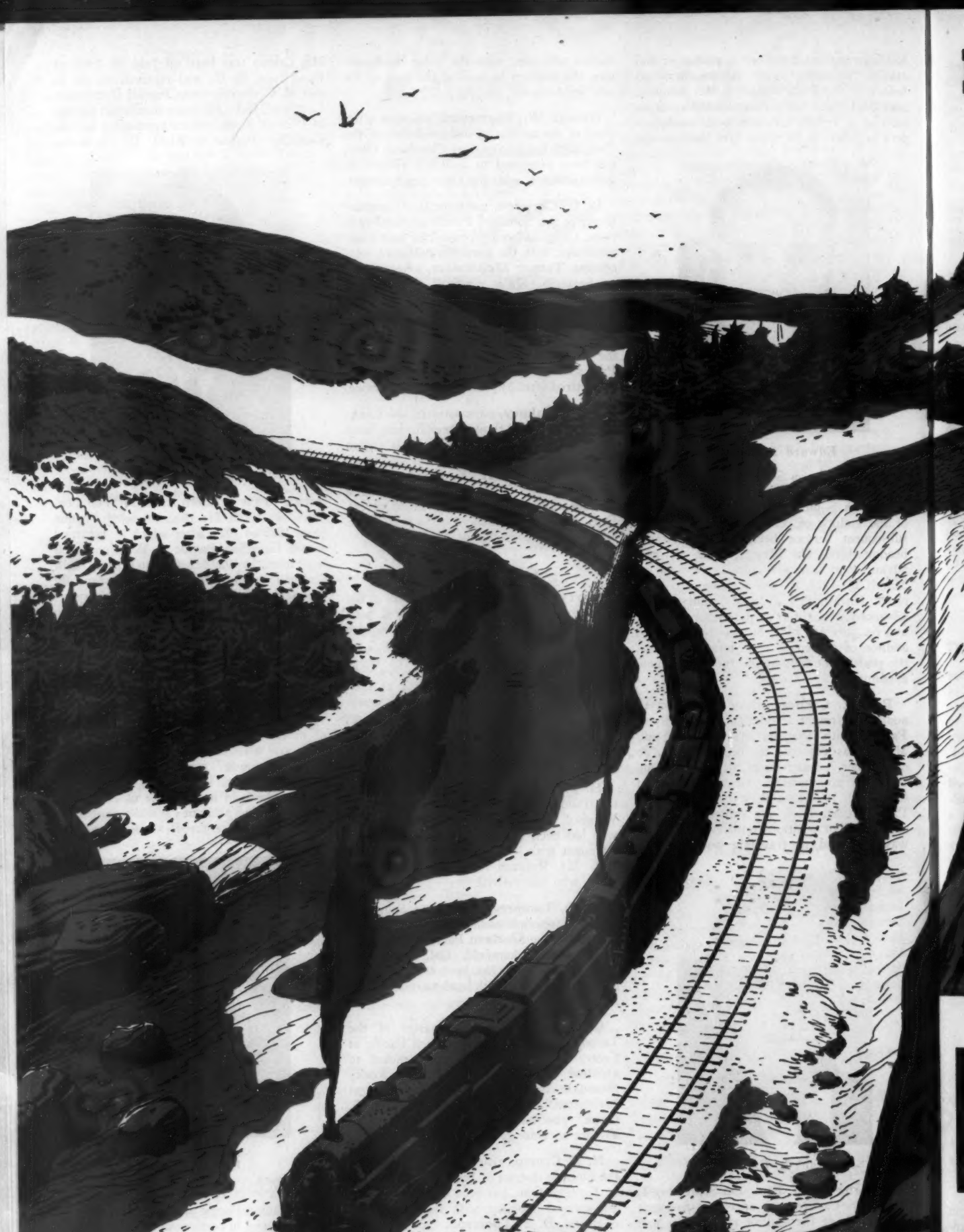
ferring to the Western shops at Winnipeg, Man., in 1922. He then attended Purdue from 1925 to 1929, after which he returned to the Canadian Pacific at Winnipeg as a machinist. In 1930 Mr. Crump became night foreman at Sutherland, Sask., subsequently becoming shop foreman at Lethbridge, Alta., and Calgary, successively. He also served consecutively as locomotive foreman at Wilkie, Sask., night foreman at Moose Jaw, Sask., and division master mechanic at Moose Jaw, and in 1936 was transferred to Regina, Sask. He was appointed chief mechanical draftsman, Western lines, at Winnipeg in 1939, assistant superintendent of motive power for Western Canada in 1940, and assistant to the vice-president in 1942, becoming general superintendent, Ontario district, in October, 1943, which position he held at the time of his recent appointment as assitant general manager.

Mr. Thomson entered railroad service in

D. S. Thomson

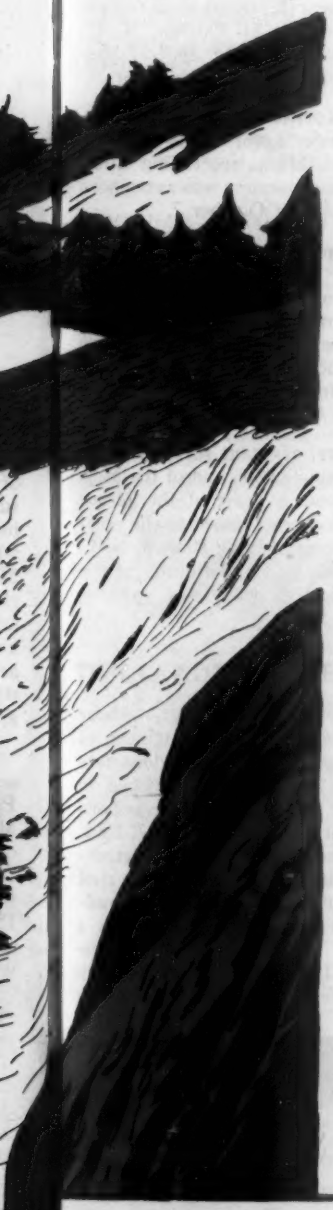
1910 as a messenger at the Angus shops of the Canadian Pacific at Montreal, Que., and has remained in continuous service with the company since. He served in the offices at Montreal until 1925, when he became statistician. In 1926 he was named chief clerk

News Department continued on second left-hand page



1932

THIS BRAKE LETS TRAINS GROW UP TO MEET RESPONSIBILITIES



The war accelerated a long-time trend toward more powerful locomotives, faster schedules, heavier loads, longer trains, and higher utilization . . . and it also found the brake that would meet these conditions ready and waiting: the Westinghouse "AB."

The "AB" brake gives control of slack unobtainable with any previous equipment. The quick application-positive release-uniform recharge features, permit the longest trains to "slow down" and "pick up" without stopping. It keeps wartime traffic rolling. And finally, rugged construction and effective dirt-protection elements keep the equipment on the job—working always toward maximum utilization of cars.

75 Years of Pioneering

WESTINGHOUSE AIR BRAKE COMPANY, WILMERDING, PA.

Westinghouse "AB" Brakes assure smooth handling with maximum protection of rolling stock and lading on any type of freight train today . . . and have plenty of potential to meet the expanding needs that tomorrow may bring.

1869 1944

TO PERMIT TODAY'S TRAINS TO MOVE AT SHORTER INTERVALS WITH HEAVIER LOADS AT HIGHER SPEEDS—SAFELY.

to the general manager at Montreal, and held that position until 1935 when he became assistant superintendent at Smith's Falls, Ont., being transferred to Sudbury, Ont., the following year. He held the position of assistant superintendent of the Bruce division in 1937 when he was advanced to superintendent of the Toronto division at Toronto. He was serving as superintendent of the New Brunswick district at Brownville Junction at the time of his recent appointment as general superintendent of the Ontario district.

Everett G. Baker, whose promotion to passenger traffic manager of the St. Louis-San Francisco, with headquarters at St. Louis, Mo., was reported in the *Railway Age* of September 23, was born at Henderson, Ky., on December 19, 1893, and entered railway service in January, 1912, with the Terminal Railroad Association of St. Louis. In 1914 he went with the Frisco as a station passenger agent at St. Louis, later serving as city passenger agent at Cincinnati, Ohio, and Kansas City, Mo. For a short period in 1918, he was given a temporary assignment as auditor, with headquarters at St. Louis, and then took a

Everett G. Baker

leave of absence to serve as office manager of the War Loan Organization, also at St. Louis. Mr. Baker returned to the Frisco on January 1, 1920, and was given a number of temporary assignments until September of that year when he was appointed city passenger agent, with headquarters at Chicago. On December 1, 1921, he was advanced to district passenger agent, with the same headquarters, and four years later he became division passenger agent at St. Louis. On February 1, 1927, Mr. Baker was promoted to assistant general passenger agent, with headquarters at Kansas City, Mo., and in December, 1934, he was transferred to Chicago. On March 1, 1937, he was advanced to general passenger agent at St. Louis, the position he held at the time of his new appointment.

Charles W. Schwarz, superintendent of the Jersey Central's Lehigh & Susquehanna (Pa.) division, will become superintendent of the Central division, including the recently added New York harbor area terminal territory, with headquarters at Jersey City, N. J., on October 16. He succeeds **R. F. Dickerson,** who becomes superintendent of the Southern division and of the New York & Long Branch, which were formerly part of the Central division, at Iong Branch, N. J. **Frank J. Cassidy,** assistant superintendent of the Central division, will become superintendent of the L. & S. division succeeding Mr. Schwarz, and **Benjamin F. Davis,** manager of terminal operations in the metropolitan district, will succeed Mr. Cassidy as assistant superintendent of the Central division.

The Seaboard Air Line has announced several reassignments of operated mileage. In the Northern district, of which **M. H. Gold** is assistant general manager with headquarters at Raleigh, N. C., the Virginia division consists of the Richmond, Va., to Hamlet, N. C., line and branches, the Norlina, N. C., to Portsmouth, Va., line and branches, and the Hamlet terminals. **R. M. Stone** is superintendent of the Virginia division at Raleigh. The Georgia division, of which **John White** is superintendent at Atlanta (Howells), Ga., is compriced of the Wilmington, N. C., to Birmingham, Ala., line and branches, and the Monroe, N. C., to Rutherfordton line and branches. In the Southern district, of which **C. H. Sauls** is assistant general manager at Savannah, Ga., the Carolina division now consists of all lines between Hamlet and Jacksonville (Fla.)-Baldwin and branches, and the Savannah terminals. **J. H. Bowen** is superintendent of the Carolina division at Savannah. The Alabama division, of which **J. L. Cooke** is superintendent at Savannah, is comprised of the Savannah to Montgomery, Ala., line and branches, Columbus, Ga., to Bainbridge line and the Bainbridge terminals. There have been no changes in the North Florida or the South Florida divisions.

R. C. Wilson, trainmaster of the St. Louis-Louisville divisions of the Southern at Huntingburg, Ind., has been promoted to assistant superintendent of the Cincinnati, New Orleans & Texas Pacific (a subsidiary of the Southern) with headquarters at Somerset, Ky., succeeding **James W. Higgins,** who has retired at his own request after more than 44 years of railroad service. **P. M. Wallis,** trainmaster of the St. Louis-Louisville divisions at Louisville, Ky., has been transferred to Huntingburg, succeeding Mr. Wilson, while **J. P. Mumford,** trainmaster of the Mobile division at Selma, Ala., succeeds Mr. Wallis at Louisville. **L. I. McNutt,** assistant trainmaster of the Alabama Great Southern (part of the Southern) at Birmingham, Ala., has been promoted to trainmaster of the Mobile division with headquarters at Selma, replacing Mr. Mumford. **J. G. Woodall,** trainmaster of the New Orleans & Northeastern (also part of the Southern) at Hattiesburg, Miss., has been granted a leave of absence to enter military service, and has been succeeded by **K. C. Shults,** trainmaster of the Birmingham division of the Southern at Birmingham. **R. J. Stone,** trainmaster of the New Orleans & Northeastern at Hattiesburg, has been transferred to Birmingham as trainmaster of the Birmingham division (east end) succeeding Mr. Shults, while **J. P. Kelly,** trainmaster of the Birmingham division (west end) has replaced Mr. Stone as trainmaster of the New Orleans & Northeastern at Hattiesburg, and **E. D. Singleton,** chief dispatcher of the Birmingham division at Birmingham, has been promoted to trainmaster of the Birmingham division (west end) succeeding Mr. Kelly.

TRAFFIC

J. S. Bloodworth, division passenger agent of the Southern at Raleigh, N. C., has been appointed assistant general passenger agent with the same headquarters.

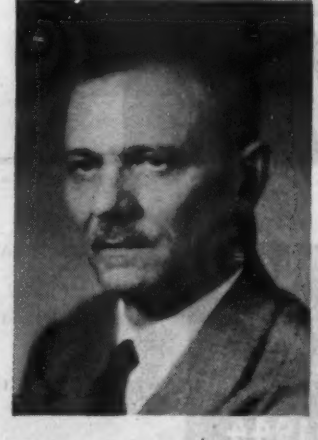
Howard C. Northern has been appointed district passenger agent of the Pennsylvania at St. Paul, Minn., succeeding **Leon B. Poore,** whose retirement was announced in the *Railway Age* of October 7.

Roy A. Cooper, traveling freight and passenger agent of the Southern Pacific Lines in Texas and Louisiana, with headquarters at Birmingham, Ala., has been promoted to general agent, with the same headquarters, succeeding **S. J. Brown,** whose recent retirement was reported in the *Railway Age* of August 19.

E. T. M. Carr, assistant superintendent of the Southern subdivision and of the New York & Long Branch (part of the Jersey Central Lines) has been named to the position of general agent at Long Branch, N. J., in addition to taking over the duties of the late **A. C. Giddes,** who was division freight agent there.

ENGINEERING & SIGNALING

Robert Lawrence Groover, whose appointment as assistant chief engineer of the Atlantic Coast Line with headquarters at Wilmington, N. C., was announced in the *Railway Age* of September 30, was born at Quitman, Georgia, on November 7, 1891. He was graduated from Alabama Polytechnis Institute with a B. S. degree in civil engineering in June, 1914, and entered railroad service the following September as a draftsman and instrument man on the Atlantic Coast Line, maintenance of way department. After serving briefly with the



Robert Lawrence Groover

Central of Georgia as a draftsman from March, 1916, to November, 1916, he rejoined the Atlantic Coast Line as a computer and pilot engineer in the valuation department. In October, 1918, he was

named assistant engineer, maintenance of way, and held this position until May, 1920, when he was appointed assistant engineer in the chief engineer's office. He served as office engineer from November, 1924, until June, 1929, when he was advanced to engineer of design, in which position he remained until December, 1941, when he was promoted to principal assistant engineer, the position he held at the time of his recent appointment to assistant chief engineer. From May 31, 1943, to September 16, 1944, Mr. Groover served with the Office of Defense Transportation at Washington, D. C., as associate division director, controlled materials section, way and structures.

William Jefferson Turner, whose appointment as principal assistant engineer of the Atlantic Coast Line, with headquarters at Wilmington, N. C., was announced in the September 30 issue of *Railway Age,* was born in Pike County, Ala., on January 16, 1902. After attending Alabama Polytechnic Institute, Auburn, Ala., he entered railroading in June, 1925, with the Atlantic Coast Line as a rodman in the construction department, and was promoted to transitman the following September. He became

William Jefferson Turner

a junior engineer in the chief engineer's office in September, 1928, and then served as assistant engineer, office engineer, and senior assistant engineer at Jacksonville, Fla., until May 1, 1940, when he was advanced to division engineer there. Mr. Turner transferred to the chief engineer's office as engineer of design in 1942, and held that position until his recent promotion to principal assistant engineer.

MECHANICAL

J. A. Cannon, master mechanic of the Northern Pacific at Jamestown, N. D., has been appointed acting master mechanic of the Idaho division, with headquarters at Parkwater, Wash., succeeding **J. A. Clark** who has been granted a leave of absence because of ill health.

H. Ballenberger, master mechanic of the Seaboard Air Line at Hamlet, N. C., has been transferred to the Virginia division at Raleigh, N. C. **H. W. Jarrett** remains at Savannah, Ga., as master mechanic of the Carolina division. **D. M. Wood,** formerly master mechanic at Jacksonville, Fla., has been assigned to the Alabama division at Savannah, while **W. J. Jarrett,** general foreman of the locomotive department at Hermitage, Va., has been promoted to master mechanic of the North Florida division at Jacksonville. These appointments have been made in connection with the reassignment of operated mileage of the Seaboard Air Line reported elsewhere in these columns.

OBITUARY

Turner McAllaster, land commissioner of the Southern Pacific, with headquarters at San Francisco, Cal., died at Los Angeles, Cal., on September 28.

John C. Shreeve, who retired in 1938 as superintendent of motive power of the Elgin, Joliet & Eastern, with headquarters at Joliet, Ill., died at his home in that city on October 7, following a lengthy illness.

Howard R. Sturtevant, railway attorney and an expert on land and tax legislation who was a member of the law firm of Rann, Brown, Sturtevant & Kelly, Buffalo, N. Y., died on September 28 at Buffalo. He was 67 years old. Mr. Sturtevant was at one time land and tax agent of the New York Central, Buffalo division, and later held the same position in the Metropolitan area with headquarters at New York. He also served as special valuation counsel of that road and represented the system in valuation proceedings before the Interstate Commerce Commission.

John F. Porterfield, who retired in 1938 as general superintendent of transportation of the Illinois Central, with headquarters at Chicago, died in a hospital in that city on October 5 following a lengthy illness. Mr. Porterfield was born at Pulaski, Ill., on February 23, 1871, and entered railway service in 1883 as a messenger boy of the I. C. He subsequently served as telegrapher and agent until 1890 and during the following seven years he was chief clerk on various divisions. In 1897 Mr. Porterfield was promoted to trainmaster and served in that capacity at various points of the road until 1905, when he was advanced to division superintendent, with headquarters at Vicksburg, Miss. Later he was transferred successively to McComb, Miss., and Carbondale, Ill., and in May, 1912, he was further promoted to general superintendent, lines south of the Ohio river, with headquarters at New Orleans, La. In January, 1915, Mr. Porterfield was advanced to the position he held at the time of his retirement.

Leon Leslie McIntyre, assistant general manager of the Clinchfield at Erwin, Tenn., died on October 7 at Erwin. He was 70 years old. Mr. McIntyre was born at McColl, S. C., on October 4, 1874, and entered railroad service in 1891 as a station helper with the Atlantic Coast Line at McColl. In 1892 he became relief agent-operator, and then joined the Norfolk & Western in July, 1893, as a clerk-operator at Welch, W. Va. The following September he entered yard service, and in 1896 he was named night weighmaster, coal and coke, at Bluefield, W. Va. He thereafter served successively as train dispatcher, night chief dispatcher, chief dispatcher, and car distributor until 1909, when he joined the Carolina, Clinchfield & Ohio as car service agent. He served as trainmaster on this road from 1911 until 1915, when he was advanced to superintendent, subsequently serving as superintendent of its successor, the Clinchfield, at Erwin. In 1940 Mr. McIntyre was named general superintendent at Erwin, and on August 1, 1944, he was promoted to assistant general manager, the position he held at the time of his death.

Harry Turner Newcomb, who retired as vice-president and general counsel of the Delaware & Hudson in January, 1935, died at New York on October 7. Born on January 4, 1867, at Owosso, Mich., Mr. Newcomb attended Columbian University (now George Washington University), after which he became employed in the accounting department of the Chicago, Milwaukee & St. Paul (now Chicago, Milwaukee, St. Paul & Pacific). After serving for a time with the Interstate Commerce Commission, he became chief of the Transportation section, United States Department of Agriculture in 1895, and in 1899 went with the division of agriculture of the twelfth United States Census. Mr. Newcomb resigned from federal service in 1901 to become editor of Railway World. Not long thereafter he began the practice of law, and in 1902 and 1903 appeared as one of the counsel for the Philadelphia & Reading Coal & Iron Company before the Anthracite Strike Commission. After engaging in law practice in Washington, D. C., and in New York, Mr. Newcomb joined the Delaware & Hudson in 1921 as general solicitor, becoming general counsel in 1926 and in 1930 vice-president, in addition to his position as general counsel, remaining in that capacity until his retirement in 1935.

Sidney A. Covington, who retired in September, 1942, as general superintendent of the Wichita Valley and superintendent of the Fort Worth & Denver City, died at his home in Wichita Falls, Tex., on September 29. Mr. Covington was born at Danville, Ill., on November 28, 1878, and entered railway service in 1898 as a messenger boy on the Wabash, later serving in various clerical capacities. In March, 1902, he went with the Denver & Rio Grande Western as a clerk in the superintendent's office and in 1904 he returned to the Wabash as chief clerk to the engineer maintenance of way at Detroit, Mich. Mr. Covington then became chief clerk to the consulting engineer of the Wheeling & Lake Erie and the Wabash Pittsburgh Terminal (now the Pittsburgh & West Virginia) at Canton, Ohio, and in 1906 he went with the Colorado & Southern as chief clerk to the superintendent. From 1911 to 1918 he served as trainmaster and assistant superintendent of the C. & S. at Trinidad, Colo., and in the latter year he was advanced to superintendent at Denver, Colo. A year later, he was appointed general superintendent of the Fort Worth & Denver City and the Wichita Valley, with headquarters at Wichita Falls. In 1930 his title on the F. W. & D. C. was changed to superintendent.

Let's get *down to earth*

on train communication

"UNION"

ITC

INDUCTIVE TRAIN COMMUNICATION

***Dependable* voice communication**

"Union" I.T.C. (Inductive Train Communication) system provides dependable, practicable two-way voice communication between vehicles on a train, between trains, and between trains and wayside points.

It is the only train communication system designed exclusively for railroad use, by men who know railroad needs, and proved in regular railroad service.

RUGGED enough

for continuous service

Railroad rolling stock must have a high degree of availability—and train-carried equipment of all kinds must be built to stand the shock and vibration of everyday railroad use.

"Union" knows what conditions must be met, and how to meet them, for "Union" has been building train-carried electronic equipment for over twenty years, ever since this company developed Continuous Cab Signals.

The skill acquired through this long experience has been applied to the design and construction of the electronic equipment in "Union" Inductive Train Communication.

Principal operational units are arranged in quick detachable trays suitably housed in a weatherproof case. Individual elements are strongly built and firmly mounted, and the entire chassis is insulated against shock.

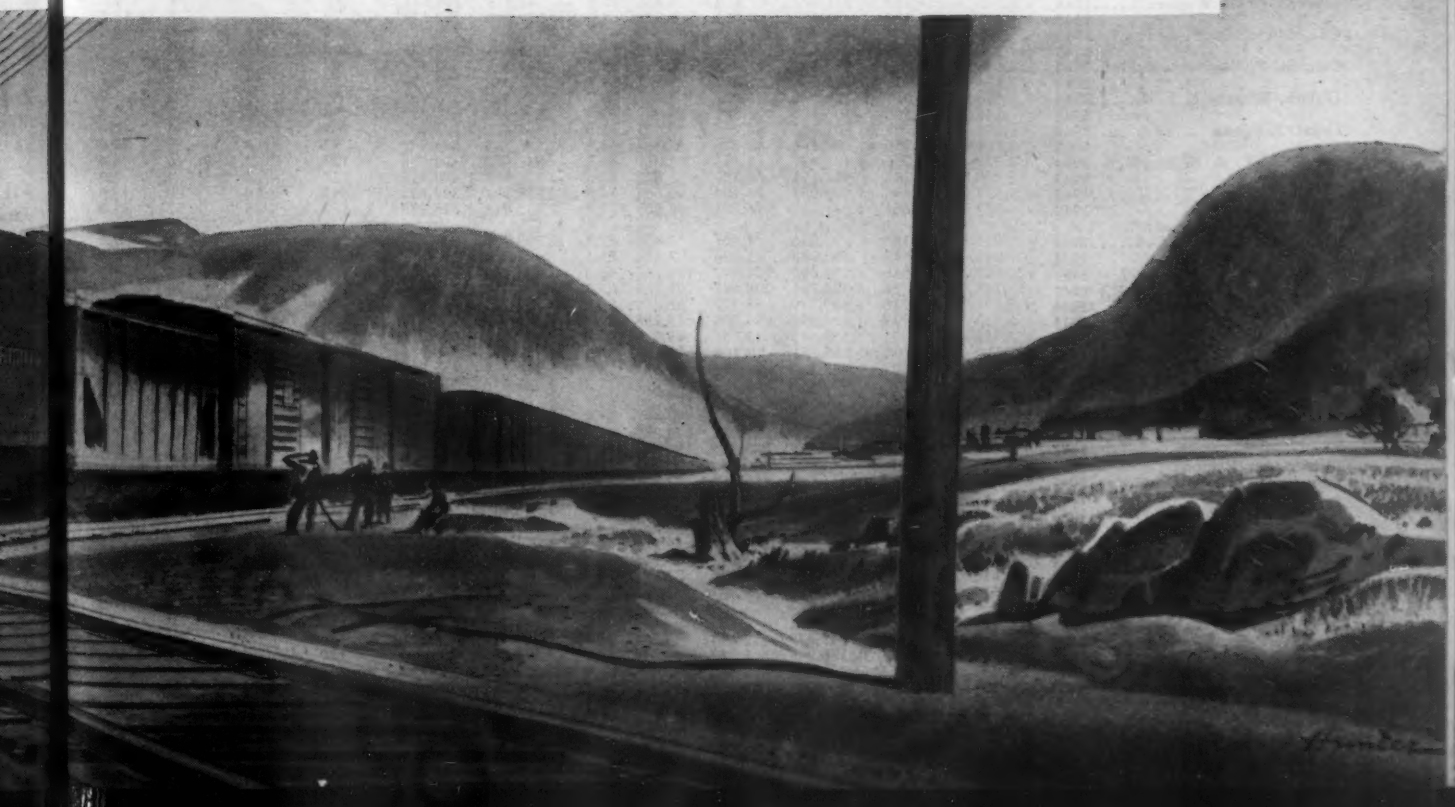
As a result, this equipment has stood up, day after day, month after month, in railroad service—another reason why, for dependable train communication, *"Union" I.T.C. is the answer.*

Full information will be furnished without obligation by our nearest district office.

UNION SWITCH & SIGNAL COMPANY

SWISSVALE, PA.

NEW YORK CHICAGO ST. LOUIS SAN FRANCISCO



Operating Statistics of Large Steam Railways—Selected Items for the

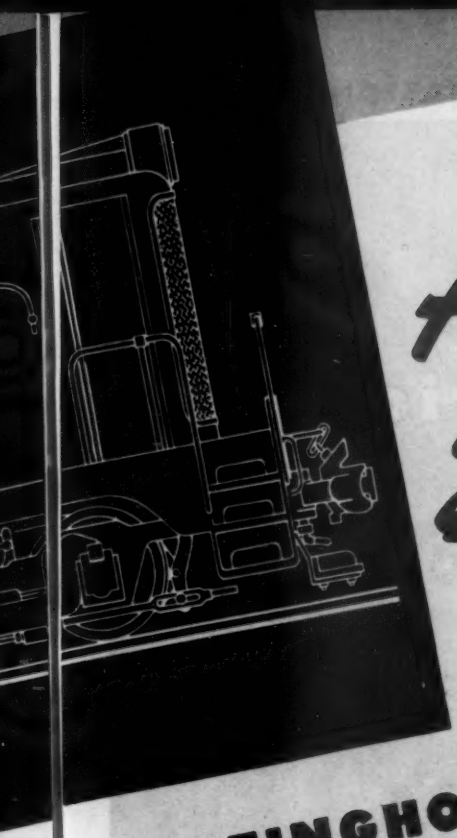
Region, road, and year	Miles of road operated	Train-miles	Locomotive-miles: Principal and helper	Locomotive-miles: Light	Car-miles: Loaded (*thousands*)	Car-miles: Per cent loaded	Ton-miles (*thousands*): Gross excl. locos. & tenders	Ton-miles (*thousands*): Net-rev. and non-rev.	Road locos. on line: Serviceable: Unstored	Road locos. on line: Serviceable: Stored	Road locos. on line: B. O.	Road locos. on line: Per cent B. O.
New England Region:												
Boston & Albany	1944	362	156,277	196,785	33,253	3,782	61.5	257,048	108,016	79	..	14	15.1
	1943	362	168,336	202,274	37,940	4,198	60.9	289,793	124,342	87	..	7	7.4
Boston & Maine	1944	1,807	375,095	425,729	41,823	13,193	65.9	870,149	389,531	145	..	22	13.2
	1943	1,807	396,159	466,646	53,165	13,376	65.0	903,066	406,229	160	..	29	15.3
N. Y., New H. & Hartf.†	1944	1,815	496,609	609,584	57,379	17,639	64.3	1,131,276	486,632	224	5	26	15.6
	1943	1,815	518,065	621,839	65,148	18,478	65.0	1,185,171	516,723	230	4	31	16.7
Great Lakes Region:												
Delaware & Hudson	1944	846	319,058	390,712	37,362	13,497	65.8	975,010	512,213	126	54	34	15.9
	1943	848	357,877	435,595	37,916	14,501	65.7	1,060,157	560,071	135	41	38	17.8
Del., Lack. & Western	1944	971	372,661	437,332	65,750	16,264	68.0	1,087,368	514,505	143	28	28	14.1
	1943	972	434,535	537,634	116,036	19,983	63.5	1,389,953	644,348	173	3	26	12.9
Erie	1944	2,244	959,226	1,028,037	73,364	44,413	64.9	2,973,179	1,274,364	322	22	57	14.2
	1943	2,242	1,039,604	1,117,923	89,078	46,682	65.3	3,117,168	1,378,702	317	11	75	18.6
Grand Trunk Western	1944	1,026	256,610	261,328	2,178	8,160	65.8	528,474	228,903	67	..	10	13.0
	1943	1,026	304,292	309,562	2,815	9,441	62.7	665,259	306,702	65	4	14	16.9
Lehigh Valley	1944	1,247	596,230	664,818	88,307	25,041	59.3	1,841,719	866,707	152	..	15	9.0
	1943	1,248	533,089	591,847	101,860	23,133	61.8	1,658,356	796,804	146	..	11	7.0
New York Central	1944	10,325	3,622,193	3,909,255	242,715	138,394	62.7	9,746,059	4,560,165	1,136	15	239	17.2
	1943	10,365	3,926,637	4,248,430	270,694	149,412	61.2	10,805,499	5,056,353	1,215	13	170	12.2
New York, Chi. & St. L.	1944	1,657	860,437	871,294	9,800	34,054	65.6	2,271,422	1,020,424	173	..	16	8.5
	1943	1,657	883,833	906,263	11,401	34,165	64.9	2,309,880	1,064,916	174	..	11	5.9
Pere Marquette	1944	1,915	459,789	471,371	11,655	15,494	65.4	1,042,690	485,887	146	2	24	14.0
	1943	1,975	479,460	506,686	11,727	15,394	63.4	1,069,529	498,702	137	1	23	14.3
Pitts. & Lake Erie	1944	229	92,512	97,913	56	4,222	66.7	360,448	216,864	33	..	12	26.7
	1943	231	97,214	101,472	....	4,347	69.0	373,288	230,399	36	1	12	24.5
Wabash	1944	2,381	783,634	804,261	19,461	28,310	68.4	1,852,073	834,210	173	3	45	20.4
	1943	2,381	826,241	856,310	20,549	30,279	67.5	2,036,843	943,204	181	7	36	16.1
Central Eastern Region:												
Baltimore & Ohio	1944	6,113	2,569,340	3,218,249	336,343	90,538	63.4	6,672,388	3,341,333	922	..	213	18.8
	1943	6,116	2,588,934	3,189,175	362,630	87,680	62.2	6,490,510	3,230,992	927	1	201	17.8
Central of New Jersey†	1944	655	249,312	290,927	63,835	8,704	61.7	632,463	310,748	125	10	21	13.5
	1943	657	274,337	316,579	62,338	9,098	66.0	644,257	337,034	136	2	22	13.8
Chicago & Eastern Ill.	1944	912	347,076	358,472	11,803	10,567	58.7	763,509	342,840	79	..	7	8.1
	1943	912	304,869	317,308	10,128	8,930	59.7	638,205	288,932	73	4	9	10.5
Elgin, Joliet & Eastern	1944	392	132,724	136,444	3,987	3,667	65.4	288,115	155,667	61	..	12	16.4
	1943	392	136,895	140,723	3,149	3,825	66.0	302,780	166,509	61	2	14	18.2
Long Island	1944	372	39,027	40,994	15,349	469	54.4	35,190	13,362	44	..	6	12.0
	1943	374	39,863	41,728	15,440	438	52.1	35,272	14,579	37	..	5	11.9
Pennsylvania System	1944	9,872	4,889,061	5,680,393	732,601	191,068	62.8	13,754,820	6,669,041	1,980	2	213	9.7
	1943	9,932	5,061,405	5,920,342	800,761	193,183	61.7	14,183,548	6,917,192	1,984	..	182	8.4
Reading	1944	1,409	576,230	652,375	82,852	19,071	65.5	1,429,970	772,996	251	17	51	16.0
	1943	1,417	600,220	671,719	87,522	18,799	65.4	1,434,982	783,471	260	19	38	12.0
Pocahontas Region:												
Chesapeake & Ohio	1944	3,032	1,093,212	1,174,053	57,591	51,984	57.9	4,466,261	2,576,951	435	8	79	15.1
	1943	3,028	1,136,416	1,223,603	58,592	54,005	58.2	4,669,769	2,703,361	438	1	62	12.4
Norfolk & Western	1944	2,132	799,397	853,814	63,447	37,793	59.0	3,210,618	1,714,323	278	33	21	6.3
	1943	2,133	859,574	931,051	71,526	39,118	58.6	3,402,234	1,862,691	300	16	23	6.8
Southern Region:												
Atlantic Coast Line	1944	4,953	939,796	954,130	14,593	24,954	65.8	1,671,679	768,306	375	14	30	7.2
	1943	4,947	975,592	996,650	16,314	26,315	64.3	1,801,605	833,638	346	19	30	7.6
Central of Georgia†	1944	1,783	384,495	394,987	6,329	9,064	65.7	606,195	273,847	95	..	10	9.5
	1943	1,783	301,248	307,543	5,402	7,342	71.5	464,280	214,919	106	..	11	9.4
Gulf, Mobile & Ohio	1944	1,950	304,410	384,153	3,350	11,131	74.8	715,244	351,364	112	..	13	10.4
	1943	1,962	336,148	419,366	1,484	11,063	69.3	741,958	363,202	112	2	8	6.6
Illinois Central (incl.	1944	6,347	1,650,434	1,664,144	30,495	64,095	63.4	4,455,982	2,083,125	653	..	44	6.3
Yazoo & Miss. Vy.)	1943	6,348	1,786,232	1,805,343	32,948	68,099	60.5	4,946,935	2,298,324	613	..	78	11.3
Louisville & Nashville	1944	4,734	1,604,920	1,735,005	44,447	41,427	63.8	2,972,671	1,523,784	409	15	56	11.7
	1943	4,736	1,638,183	1,783,249	47,055	40,691	62.7	2,983,919	1,527,160	426	8	49	10.1
Seaboard Air Line*	1944	4,161	907,742	1,124,335	17,450	24,851	67.8	1,622,870	736,739	309	4	45	12.6
	1943	4,164	848,618	977,120	11,576	22,222	67.4	1,506,086	713,337	294	13	34	10.0
Southern	1944	6,471	2,213,741	2,261,377	33,411	50,142	68.2	3,217,758	1,469,172	591	..	94	13.7
	1943	6,478	2,129,625	2,172,766	31,402	46,697	69.2	3,022,464	1,414,338	601	..	79	11.6
Northwestern Region:												
Chi. & North Western	1944	8,074	1,020,379	1,062,616	20,748	33,275	66.5	2,266,507	1,031,525	365	13	105	21.7
	1943	8,098	1,150,322	1,209,428	25,169	36,843	62.0	2,605,469	1,234,240	383	24	83	16.9
Chicago Great Western	1944	1,445	264,435	271,007	7,169	8,476	71.7	543,318	245,541	73	..	8	9.9
	1943	1,445	277,193	283,338	3,789	8,522	68.0	578,546	262,374	70	..	8	10.3
Chi., Milw., St. P. & Pac.†	1944	10,715	1,449,925	1,537,199	72,269	49,569	68.5	3,313,347	1,580,831	499	47	66	10.8
	1943	10,732	1,612,363	1,711,623	76,244	51,659	64.2	3,631,855	1,696,236	507	43	54	8.9
Chi., St. P., Minneap. & Om.	1944	1,606	200,747	216,654	11,668	5,220	69.3	351,884	162,108	99	25	11	8.1
	1943	1,614	225,036	242,066	13,833	5,773	64.9	413,238	193,079	98	25	8	6.1
Duluth, Missabe & I. R.	1944	546	179,077	179,972	1,932	9,957	50.7	936,410	576,256	51	..	1	1.9
	1943	546	194,820	195,736	1,285	10,822	51.3	999,938	615,837	54	3	3	5.0
Great Northern	1944	8,276	1,208,709	1,201,983	48,766	48,627	66.6	3,565,425	1,825,490	391	18	58	12.4
	1943	8,171	1,228,250	1,227,148	48,526	47,914	65.5	3,636,154	1,894,940	395	8	55	12.0
Min., St. P. & S. St. M.†	1944	4,259	423,776	435,421	7,403	12,079	66.7	832,972	404,516	127	2	6	4.4
	1943	4,258	474,243	487,193	8,369	12,672	62.6	917,902	440,415	127	3	4	3.0
Northern Pacific	1944	6,571	953,395	1,020,901	76,103	40,602	73.0	2,714,193	1,342,615	365	16	60	13.6
	1943	6,572	971,601	1,041,088	76,301	38,605	71.8	2,630,013	1,315,338	362	26	52	11.8
Central Western Region:												
Alton†	1944	915	271,180	292,336	1,007	7,836	71.1	508,089	244,342	72	2	6	7.5
	1943	915	269,548	286,942	1,024	7,674	71.5	523,402	240,787	71	2	6	7.6
Atch., Top. & S. Fe (incl.	1944	13,093	3,703,966	3,952,302	224,997	134,769	64.0	9,290,440	3,777,272	878	6	114	11.4
G. C. & S. F. & P. & S. F.)	1943	13,148	3,081,325	3,326,791	208,547	101,364	63.3	7,188,484	2,909,583	847	1	90	9.6
Chi., Burl. & Quincy	1944	8,791	1,386,718	1,449,319	45,177	52,455	66.7	3,597,209	1,703,803	462	6	78	14.4
	1943	8,833	1,544,122	1,624,772	54,201	55,355	63.7	4,034,909	1,939,171	492	..	61	11.0
Chi., Rock I. & Pac.†	1944	7,718	1,485,451	1,555,612	13,056	45,913	65.8	3,109,083	1,394,288	407	..	61	13.0
	1943	7,718	1,527,702	1,585,781	19,463	42,123	61.9	2,992,871	1,318,960	411	..	58	12.4
Denver & R. G. Wn.†	1944	2,388	432,377	483,242	74,257	14,885	75.2	944,788	455,882	154	7	53	24.8
	1943	2,405	475,276	545,412	87,197	16,717	75.3	1,078,016	533,003	182	2	32	14.8
Southern Pacific—Pac. Lines	1944	8,193	2,410,309	2,749,382	420,118	103,398	68.5	6,705,940	2,744,927	844	..	124	12.8
	1943	8,230	2,350,117	2,649,962	392,093	94,492	64.9	6,416,737	2,633,919	844	7	110	11.4
Union Pacific	1944	9,782	2,885,253	3,068,039	251,876	113,889	71.7	7,232,892	3,222,504	770	36	72	8.2
	1943	9,812	3,117,035	3,304,815	268,636	113,789	68.0	7,576,216	3,349,431	833	..	48	5.4
Southwestern Region:												
Mo.-Kans.-Texas Lines	1944	3,241	896,438	933,162	19,369	23,918	59.5	1,667,747	745,531	155	..	14	8.3
	1943	3,281	783,219	802,916	15,334	20,307	61.6	1,385,358	614,794	161	..	14	8.0
Missouri Pacific†	1944	7,071	1,741,523	1,827,807	38,517	61,646	65.2	4,243,916	1,971,218	480	2	75	13.5
	1943	7,071	1,902,096	2,030,095	48,653	62,567	64.0	4,427,404	2,065,953	508	1	56	9.9
Texas & Pacific	1944	1,882	461,738	461,738	8,071	15,497	65.4	1,024,574	398,662	136	13	6	3.9
	1943	1,882	395,650	395,650	6,731	12,203	64.5	821,659	330,684	106	22	13	9.2
St. Louis-San Francisco†	1944	4,616	1,085,532	1,169,215	29,917	27,187	65.1	1,829,477	830,844	320	..	30	8.6
	1943	4,634	1,159,740	1,244,328	28,803	27,722	61.8	1,957,507	886,731	329	..	23	6.5
St. Louis-San Fran. & Texas.	1944	159	37,474	39,054	2	613	65.6	40,438	15,976	9	..	1	10.0
	1943	159	37,361	38,435	26	560	60.9	39,173	16,034	10	..	1	9.1
St. Louis Southw. Lines†	1944	1,600	531,134	541,437	7,094	19,761	69.6	1,249,988	558,762	116	2	25	17.5
	1943	1,600	578,235	586,908	8,572	19,510	64.5	1,279,192	553,409	118	2	20	14.3
Texas & New Orleans	1944	4,339	1,126,967	1,129,821	26,659	30,475	66.4	2,087,890	915,597	263	..	16	5.7
	1943	4,339	1,192,785	1,211,047	47,791	31,744	63.0	2,163,182	931,617	257	2	21	7.5

* Report of receivers.
† Report of trustee or trustees.
Compiled by the Bureau of Transport Economics and Statistics, Interstate Commerce Commission. Subject to revision.

Month of July, 1944, Compared with July, 1943

Region, road, and year		Freight cars on line: Home	Foreign	Total	Per Cent B. O.	G.t.m. per train-hr. excl.locos. and tenders	G.t.m. per train-mi. excl.locos. and tenders	Net ton-mi. per train-mile	Net ton-mi. per l'd. car-mile	Net ton-mi. per car-day	Car miles per car-day	Net daily ton-mi. per road-mi.	Coal lb. per 1000 g.t.m. inc. loco.	Mi. per loco. per day
New England Region:														
Boston & Albany	1944	385	4,996	5,381	0.2	26,821	1,655	695	28.6	605	34.5	9,625	187	88.2
	1943	374	5,370	5,744	0.6	26,660	1,729	742	29.6	685	38.0	11,080	159	90.7
Boston & Maine	1944	2,506	10,460	12,966	3.5	36,955	2,329	1,043	29.5	943	48.4	6,954	96	93.1
	1943	2,726	10,008	12,734	2.3	34,568	2,290	1,030	30.4	1,068	54.1	7,252	95	94.0
N. Y., New H. & Hartf.†	1944	3,407	19,444	22,851	3.9	34,576	2,312	995	27.6	672	37.9	8,649	97	87.2
	1943	3,944	21,593	25,537	1.9	33,688	2,322	1,012	28.0	662	36.4	9,184	92	89.9
Great Lakes Region:														
Delaware & Hudson	1944	3,233	5,794	9,027	3.2	52,536	3,071	1,613	38.0	1,779	71.3	19,511	98	67.2
	1943	4,493	6,289	10,782	3.2	47,841	2,977	1,573	38.6	1,738	68.4	21,305	96	73.7
Del., Lack. & Western	1944	6,039	12,774	18,813	2.8	43,474	2,948	1,395	31.6	896	41.7	17,093	110	89.4
	1943	6,561	14,512	21,073	2.7	44,304	3,297	1,529	32.2	1,035	50.5	21,384	116	111.9
Erie	1944	8,692	30,128	38,820	3.1	51,951	3,114	1,335	28.7	1,086	58.3	18,319	85	95.4
	1943	11,989	24,320	36,309	2.7	51,987	3,013	1,333	29.5	1,212	62.8	19,837	85	104.0
Grand Trunk Western	1944	3,286	7,589	10,875	4.5	42,598	2,071	897	28.1	712	38.6	7,197	79	116.9
	1943	2,494	6,473	8,967	5.0	46,483	2,195	1,012	32.5	1,045	51.3	9,643	81	130.2
Lehigh Valley	1944	7,851	22,265	30,116	2.0	53,602	3,188	1,500	34.6	954	46.5	22,420	99	151.6
	1943	6,457	21,193	27,650	2.1	52,159	3,205	1,540	34.4	1,000	47.0	20,596	96	148.6
New York Central	1944	47,317	98,629	145,946	3.2	44,176	2,723	1,274	33.0	1,010	48.9	14,247	96	105.5
	1943	51,257	99,587	150,844	3.0	44,710	2,788	1,304	33.8	1,125	54.4	15,736	88	114.4
New York, Chi. & St. L.	1944	2,793	15,975	18,768	2.1	50,321	2,657	1,193	30.0	1,809	92.0	19,865	81	158.7
	1943	3,891	12,921	16,812	2.7	50,372	2,623	1,209	31.2	2,023	100.0	20,732	77	165.6
Pere Marquette	1944	2,731	9,691	12,422	3.1	40,875	2,296	1,070	31.4	1,310	63.9	8,185	85	98.2
	1943	3,109	8,142	11,251	3.1	39,175	2,267	1,057	32.4	1,456	70.9	8,145	80	110.5
Pitts. & Lake Erie	1944	3,514	9,608	13,122	4.3	54,399	3,896	2,344	51.4	536	15.6	30,549	83	77.5
	1943	4,391	8,664	13,055	4.9	53,137	3,841	2,371	53.0	550	15.0	32,174	77	73.3
Wabash	1944	6,352	13,778	20,130	3.1	46,306	2,382	1,073	29.5	1,336	66.3	11,302	98	125.0
	1943	7,561	13,776	21,337	1.8	47,223	2,486	1,151	31.2	1,434	68.2	12,779	95	131.0
Central Eastern Region:														
Baltimore & Ohio	1944	41,163	58,234	99,397	3.3	32,391	2,657	1,330	36.9	1,067	45.6	17,632	134	104.8
	1943	41,265	55,501	96,766	2.6	32,416	2,566	1,277	36.8	1,103	48.1	17,041	130	106.0
Central of New Jersey†	1944	5,940	15,426	21,366	3.0	33,971	2,552	1,254	35.7	477	21.7	15,304	119	96.8
	1943	4,006	19,514	23,520	1.7	28,463	2,380	1,245	37.0	475	19.4	16,548	124	101.1
Chicago & Eastern Ill.	1944	2,565	5,403	7,968	3.3	39,318	2,277	1,022	32.4	1,450	76.2	12,126	104	142.4
	1943	2,124	4,792	6,916	3.3	37,200	2,169	982	32.4	1,303	67.4	10,220	110	126.1
Elgin, Joliet & Eastern	1944	3,949	5,907	14,856	3.0	18,819	2,296	1,240	42.5	338	12.2	12,810	123	85.5
	1943	8,822	7,753	16,575	4.7	18,906	2,324	1,278	43.5	348	12.1	13,702	113	87.5
Long Island	1944	27	5,938	5,965	.4	7,154	926	352	28.5	80	5.2	1,159	264	52.1
	1943	16	4,509	4,525	.3	7,310	898	371	33.3	115	6.7	1,257	264	62.8
Pennsylvania System	1944	125,515	119,525	245,040	3.4	40,158	2,904	1,408	34.9	875	39.9	21,792	113	101.0
	1943	125,617	122,569	248,186	2.9	38,610	2,892	1,410	35.8	902	40.8	22,466	107	108.1
Reading	1944	12,514	25,233	37,747	1.6	30,919	2,482	1,342	40.5	684	25.8	17,697	113	84.6
	1943	12,589	22,169	34,758	2.3	30,502	2,396	1,308	41.7	733	26.9	17,836	113	85.7
Pocahontas Region:														
Chesapeake & Ohio	1944	35,472	17,215	52,687	1.4	60,072	4,131	2,384	49.6	1,559	54.4	27,417	71	84.7
	1943	37,366	15,279	52,645	1.3	60,293	4,157	2,407	50.1	1,613	55.4	28,800	66	89.3
Norfolk & Western	1944	30,795	8,633	39,428	2.2	65,440	4,072	2,174	45.4	1,395	52.1	25,938	84	95.3
	1943	30,847	7,201	38,048	2.2	63,407	4,037	2,210	47.6	1,446	51.8	28,170	84	101.9
Southern Region:														
Atlantic Coast Line	1944	7,797	15,541	23,338	3.0	31,059	1,786	821	30.8	1,011	49.9	5,004	103	79.7
	1943	7,385	17,425	24,810	3.6	31,288	1,855	858	31.7	1,033	50.7	5,436	102	87.2
Central of Georgia†	1944	1,599	6,588	8,187	1.5	30,063	1,587	717	30.2	1,065	53.6	4,954	124	129.9
	1943	2,453	6,038	8,491	1.3	28,171	1,549	717	29.3	795	37.9	3,888	114	92.4
Gulf, Mobile & Ohio	1944	2,011	6,837	8,848	.7	40,937	2,358	1,158	31.6	1,233	52.2	5,812	104	106.3
	1943	2,458	6,778	9,236	.8	40,289	2,214	1,084	32.8	1,271	55.8	5,972	107	116.7
Illinois Central (incl. Yazoo & Miss. Vy.)	1944	18,617	32,687	51,304	1.0	45,437	2,768	1,294	42.5	1,285	62.4	10,587	107	81.7
	1943	19,709	33,138	52,847	.8	45,077	2,840	1,320	33.7	1,398	68.5	11,679	100	90.7
Louisville & Nashville	1944	29,086	15,486	44,572	4.0	29,612	1,852	949	36.8	1,079	45.9	10,383	119	123.5
	1943	30,615	14,708	45,323	2.1	28,296	1,821	932	37.5	1,013	43.1	10,402	117	127.8
Seaboard Air Line*	1944	6,013	16,864	22,877	2.1	31,231	1,828	830	29.6	1,035	51.5	5,712	131	110.6
	1943	6,632	15,262	21,894	1.8	30,656	1,829	866	32.1	1,028	47.5	5,526	110	102.1
Southern	1944	16,427	33,281	49,708	2.5	25,509	1,476	674	29.3	955	47.8	7,324	138	113.4
	1943	16,493	28,857	45,350	1.9	25,205	1,441	674	30.3	1,016	48.4	7,043	135	109.7
Northwestern Region:														
Chi. & North Western	1944	23,965	31,190	55,155	3.2	35,461	2,303	1,048	31.0	605	29.3	4,121	111	77.5
	1943	22,536	34,375	56,911	3.8	35,473	2,337	1,107	33.5	783	37.7	4,917	108	86.7
Chicago Great Western	1944	1,147	4,942	6,089	1.9	35,752	2,061	931	29.0	1,325	63.8	5,481	117	116.0
	1943	1,340	5,061	6,401	1.3	37,439	2,094	949	30.8	1,452	69.3	5,857	109	122.3
Chi., Milw., St. P. & Pac.†	1944	25,568	28,078	53,646	1.8	36,655	2,309	1,101	31.9	925	42.5	4,759	114	92.0
	1943	27,180	26,636	53,816	1.5	35,980	2,270	1,060	32.8	1,030	48.8	5,099	109	102.6
Chi., St. P., Minneap. & Om.	1944	735	6,110	6,845	7.7	24,916	1,778	819	31.1	719	33.4	3,256	102	58.4
	1943	1,328	7,323	8,651	6.7	27,518	1,881	879	33.4	789	36.3	3,859	95	65.5
Duluth, Missabe & I. R.	1944	14,844	501	15,345	3.1	95,718	5,369	3,304	57.9	1,210	41.3	34,046	58	128.1
	1943	14,624	499	15,123	2.2	87,224	5,263	3,241	56.9	1,324	45.4	36,384	51	123.6
Great Northern	1944	24,246	16,416	40,662	2.5	46,428	2,970	1,521	37.5	1,418	56.7	7,115	84	92.2
	1943	25,507	15,609	41,116	2.5	45,605	2,987	1,557	39.5	1,422	54.9	7,481	80	96.5
Min., St. P. & S. St. M.†	1944	6,554	6,570	13,124	3.0	34,352	1,981	962	33.5	992	44.4	3,064	84	108.3
	1943	7,553	5,875	13,428	4.4	33,548	1,958	940	34.8	1,066	49.0	3,337	81	120.4
Northern Pacific	1944	17,883	20,211	38,094	3.3	44,959	2,861	1,415	33.1	1,181	48.9	6,591	115	87.2
	1943	20,788	12,728	33,516	3.3	42,485	2,714	1,357	34.1	1,206	49.3	6,456	124	88.2
Central Western Region:														
Alton†	1944	1,650	7,394	9,044	2.7	42,482	1,887	907	31.2	884	39.9	8,614	117	126.5
	1943	1,475	7,367	8,842	3.5	41,090	1,966	904	31.4	874	38.9	8,489	103	123.5
Atch., Top. & S. Fe (incl. G. C. & S. F. & P. & S. F.)	1944	45,843	58,226	104,069	2.9	43,946	2,528	1,028	28.0	1,198	66.8	9,306	103	142.3
	1943	53,066	42,429	95,495	2.9	39,606	2,350	951	28.7	968	53.3	7,139	110	128.6
Chi., Burl. & Quincy	1944	16,944	26,746	43,690	2.6	41,388	2,611	1,237	32.5	1,264	58.3	6,252	108	95.9
	1943	18,507	32,250	50,757	2.1	40,895	2,633	1,266	35.0	1,313	58.8	7,082	90	104.1
Chi., Rock I. & Pac.†	1944	11,277	23,596	34,873	3.6	36,636	2,109	946	30.4	1,274	63.8	5,828	103	112.5
	1943	14,161	20,155	34,316	4.5	33,214	1,975	870	31.3	1,235	63.7	5,513	106	115.6
Denver & R. G. Wn.†	1944	8,394	8,398	16,792	3.5	35,387	2,208	1,065	30.6	942	40.9	6,158	158	89.3
	1943	8,367	11,717	20,084	2.7	33,300	2,308	1,141	31.9	921	38.4	7,149	160	99.1
Southern Pacific—Pac. Lines	1944	25,030	58,238	83,268	2.4	39,474	2,805	1,148	26.5	1,081	59.5	10,808	96	112.2
	1943	26,777	59,413	86,190	2.2	36,278	2,747	1,128	27.9	987	54.6	10,324	101	108.3
Union Pacific	1944	28,684	39,626	68,310	2.7	48,967	2,542	1,133	28.3	1,537	75.8	10,627	113	127.7
	1943	30,544	44,000	74,544	2.7	43,308	2,453	1,085	29.4	1,469	73.3	11,012	111	134.7
Southwestern Region:														
Mo.-Kans.-Texas Lines	1944	1,718	8,878	10,596	.4	33,484	1,869	835	31.2	2,253	121.5	7,420	79	188.9
	1943	2,811	8,758	11,569	1.0	31,505	1,786	793	30.3	1,704	91.3	6,045	79	157.6
Missouri Pacific†	1944	11,961	29,578	41,539	1.5	41,170	2,450	1,138	32.0	1,514	72.6	8,993	99	115.4
	1943	10,769	34,444	45,213	1.4	38,165	2,339	1,091	33.0	1,431	67.7	9,425	102	126.5
Texas & Pacific	1944	1,576	6,866	8,442	1.2	42,659	2,233	869	25.7	1,488	88.5	6,833	84	105.2
	1943	1,870	5,701	7,571	1.7	40,114	2,097	844	27.1	1,362	77.9	5,668	90	99.0
St. Louis-San Francisco†	1944	6,999	12,971	19,970	1.8	33,321	1,692	768	30.6	1,308	65.7	5,806	124	115.2
	1943	8,854	11,755	20,609	2.9	32,706	1,694	767	32.0	1,312	66.4	6,173	119	121.2
St. Louis-San Fran. & Texas	1944	....	390	390	10.8	22,391	1,085	429	26.1	1,325	77.4	3,241	113	134.8
	1943	....	343	343	11.7	21,186	1,054	431	28.6	1,515	86.8	3,253	122	115.4
St. Louis Southw. Lines	1944	1,022	7,379	8,401	1.1	39,747	2,361	1,056	28.3	2,196	111.6	11,265	74	127.0
	1943	1,417	6,590	8,007	1.3	35,376	2,224	962	28.4	2,049	112.0	11,157	75	142.7
Texas & New Orleans	1944	3,658	18,922	22,580	2.8	33,720	1,825	820	30.0	1,310	65.7	6,807	85	139.3
	1943	4,212	21,149	25,361	2.1	31,802	1,836	791	29.3	1,158	62.6	6,926	84	150.7

Control stand in cab is arranged for maximum convenience and simplicity of operation.



Air Throttle Simplifies Control

WESTINGHOUSE DIESEL-ELECTRICS

On Baldwin-Westinghouse diesel-electric locomotives, engine speed is controlled by means of a single air line between the throttle handle in the cab and the governor operator on the engine.

Here are a few of the outstanding advantages of this type of control:

1. It eliminates all complicated mechanical connections between throttle handle and governor.
2. If pipe breaks, the diesel engine is automatically brought back to idling speed; an important safety feature.
3. Traction motors can be connected to the generator without first increasing diesel engine speed. This results in smooth starting of the locomotive.
4. Multiple unit control to permit operating from one cab can be arranged without complicated mechanical changes by simply adding a relatively few pieces of equipment.

BALDWIN

LOCOMOTIVES

BLW THE BALDWIN GROUP

BALDWIN PRODUCTS FOR THE RAILROADS: Steam, diesel-electric and electric locomotives, Diesel engines, Hydraulic presses, Special railroad shop equipment, Testing machines and instruments, Steel tires and rolled steel wheels, Crane wheels, Connecting rods and other steel forgings, Steel castings, Springs, Metal plate fabrication, Boilers, Non-ferrous castings, Bending rolls, Plate planers, Dynamometer cars.

HOW WESTINGHOUSE SERVES THE TRANSPORTATION INDUSTRY

"life-line" protection

with interference—free R-I-P insulators

Pin-type insulators for primary distribution circuit support. Wet and dry arcing distances vary from 1" to 4½", depending upon model used. The light glaze means R-I-P (Radio-Interference-Proof).

No arcing across air gaps. R-I-P glaze overcomes radio interference by eliminating overstressed air gaps at tie-wire and in the pinhole.

Signaling is the "life-line" of modern transportation, and every precaution must be taken to assure dependable distribution lines that carry clear and legible signals.

As the result of railway electrification demands in 1928, Westinghouse developed the first high-strength insulator . . . increasing load limits of suspension insulators to 25,000 and 36,000 pounds. One of the greatest handicaps yet to overcome, however, was the interference created by "noise generation" of insulators supporting signal wires.

Extended Westinghouse research and development overcame this problem in 1930 when it presented the industry with R-I-P* insulators . . . solving the radio reception problems caused by the usual arcing flow of capacity currents between conductor and insulator surfaces . . . without increasing the cost of distribution lines.

Westinghouse insulators offer greater safety and stability to signal power systems and provide greater resistance to mechanical abuse.

Enjoy the benefits of 25 years of practical porcelain experience. Ask your nearest Westinghouse office for complete information on Westinghouse insulators. Or write Westinghouse Electric & Manufacturing Company, P. O. Box 868, Pittsburgh 30, Pa. J-15091

*Radio-Interference-Proof . . . another Westinghouse development . . . now an industry standard.

Westinghouse INSULATORS

PLANTS IN 25 CITIES . . . OFFICES EVERYWHERE

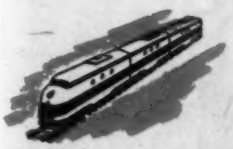
Train Talk

NEWS AND VIEWS ON ELECTRICAL EQUIPMENT
...FOR TRAIN, TRACK AND TERMINAL

1895 marked the first overhead trolley installation for electrical traction on the 7-mile New Haven Nantasket Branch. Today's catenary consists of cross and longitudinal wires and cables which hold the charged trolley wire firmly at a uniform elevation for proper contact with the pantograph . . . a current-collecting device for electric locomotives and passenger cars . . . developed and manufactured by Westinghouse.

Write today for your personal copy of booklet B-3353 . . . and learn all the facts about the new Flexarc ACP welding electrode . . . the most important development in the past ten years . . . operates on a-c or d-c reverse polarity. ACP will step up welding production and quality of welds—economically. Earmark this announcement for immediate investigation.

"Slug" and automatic two-rate charging of passenger car batteries call for Westinghouse Rectox battery chargers. The latest design features rating of 40/80 volts and can operate at 60/120 volts at rectifier. It's portable and speedy . . . and both practical and streamlined in design and operation. Your near-by Westinghouse Transportation Engineer will be glad to acquaint you with the merits of the new Rectox Charger.

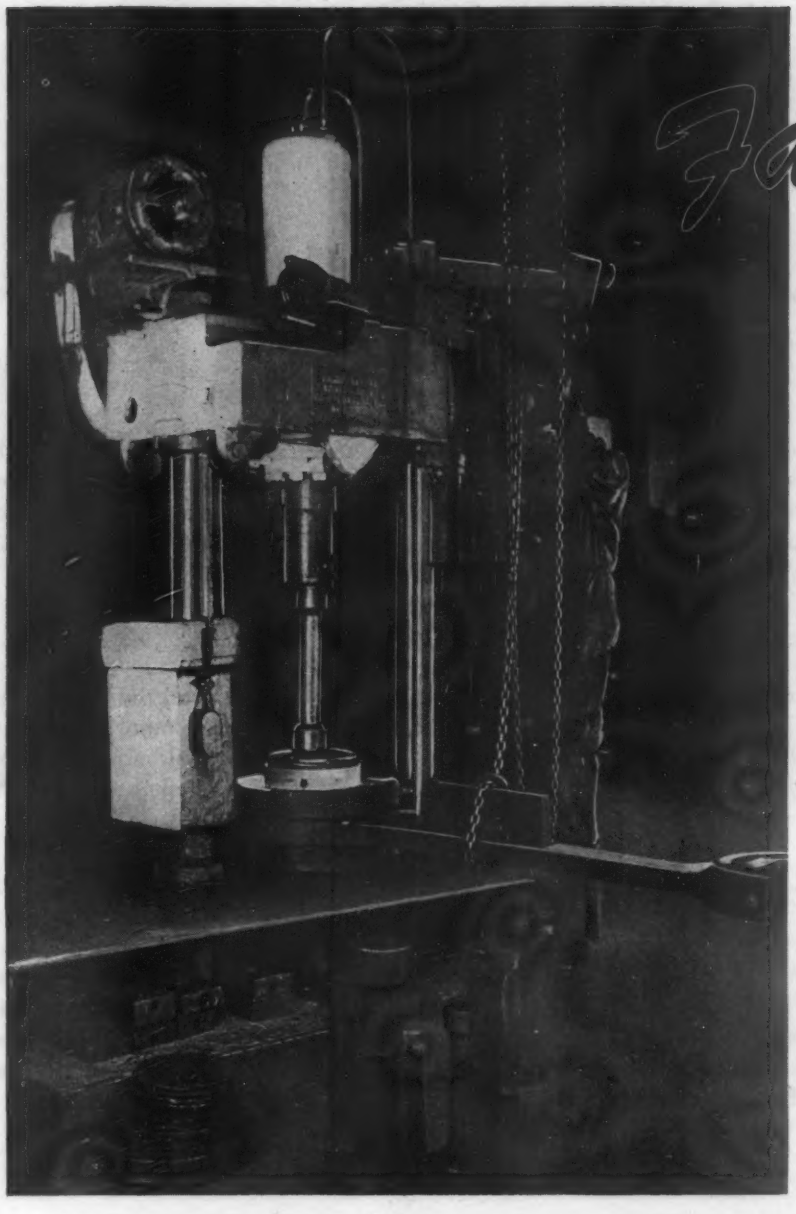


A recently developed solid coupling for Diesel locomotives replaces the flexible coupling on type 181-L and 181-L2 generators. See the new improved design . . . it's sturdier and is entirely interchangeable with previous flexible couplings. For better product performance, make your next order read solid couplings.

Are you interested in the latest developments in electrical equipment for railroad passenger cars? Lighting, air cleaning and water coolers are but three of the subjects reviewed in the Prospectus dated June 25, 1944. For further particulars or literature descriptive of any of the products mentioned in this and other Train Talks, call your nearest Westinghouse office. If you prefer, write to Westinghouse Electric & Manufacturing Company, P. O. Box 868, Pittsburgh 30, Pa.

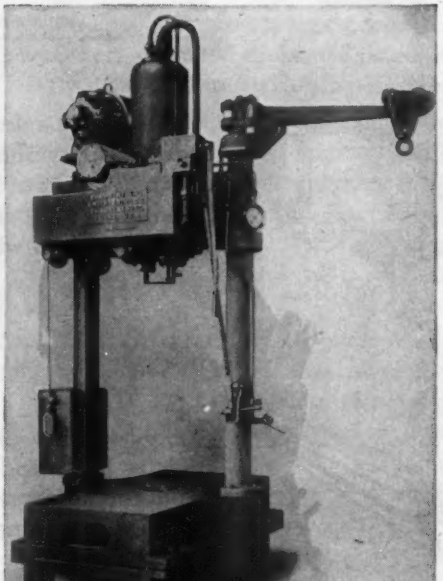
Westinghouse ELECTRICAL EQUIPMENT FOR TRAIN, TRACK, TERMINAL

PLANTS IN 25 CITIES... OFFICES EVERYWHERE



Fast Work on BUSHINGS, BRASSES, etc.

Chambersburg Vertical Hydro-Pneumatic Bushing Presses are the most rapid machines available for inserting or removing connecting rod bushings, driving rod brasses, etc., and for bending or straightening rods, levers and all types of connections.



In addition to the speed of operation due to the pneumatic rapid traverse, the press is so designed that simplicity and ease of control make it a favorite with shop men. The ram, for example, can be advanced, stopped or returned without distracting the operator's attention from his work. Pressures can be applied and held indefinitely. Maintenance is easy and inexpensive.

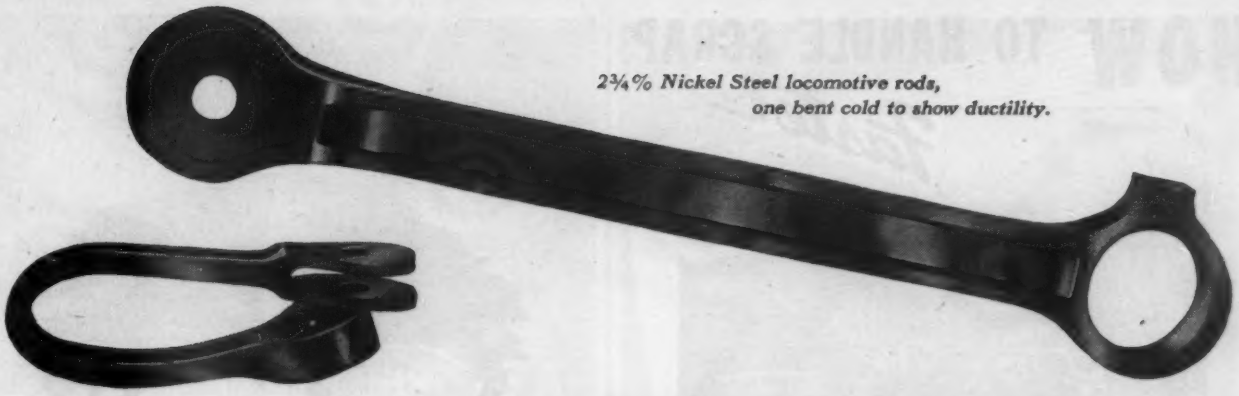
Write for complete information on this and other Chambersburg Railroad Shop Tools . . .

CHAMBERSBURG ENGINEERING CO., CHAMBERSBURG, PA.

ARMY E NAVY

CHAMBERSBURG

HAMMERS · CECOSTAMPS · PRESSES



2¾% Nickel Steel locomotive rods, one bent cold to show ductility.

QUENCHED AND TEMPERED NICKEL STEEL FORGINGS COMBINE

EXCEPTIONAL DUCTILITY WITH HIGH TENSILE STRENGTH

Composition and Typical Properties of Normalized Quenched and Tempered 2¾% Nickel Steel Rods

Description or Size	Melt Yield Pt. No. #s per Sq. In.	Tensile Strength #s per Sq. In.	Elong. % in 2"in.	Reduction in Area %	ANALYSIS					
					Car.	Mang.	Phos.	Sul.	Sil.	Ni
Main Rod....	92900	110000	25.0	64.4	.31	.78	.027	.026	.25	2.75
Main Rod....	86500	104500	25.5	65.6	.32	.86	.034	.032	.29	2.69
Main Rod....	86360	104400	26.0	64.8	.32	.86	.034	.032	.29	2.69
Main Rod....	87850	102350	26.0	66.2	.31	.89	.037	.025	.32	2.69
Front Rod....	86000	102250	25.0	67.3	.29	.82	.035	.027	.24	2.71
Front Rod....	83900	104250	25.0	66.1	.29	.82	.035	.027	.24	2.71
Front Rod....	86850	104250	27.0	66.1	.32	.86	.035	.025	.30	2.65
Front Rod....	89500	107050	25.5	65.6	.32	.86	.035	.025	.30	2.65
Back Rod....	89500	107650	25.0	62.7	.30	.79	.030	.025	.22	2.71
Back Rod....	87500	106450	25.0	65.4	.29	.82	.035	.027	.24	2.71
Back Rod....	87000	105600	25.0	65.4	.29	.82	.035	.027	.24	2.71
Back Rod....	88150	104850	26.0	66.8	.29	.82	.035	.027	.24	2.71

Specimens Taken from Mid-Section of Prolongations of the Forgings

The above table compiled by the American Locomotive Company shows the chemical compositions and mechanical properties of some normalized, quenched and tempered nickel steel front, main and back rods recently produced as replacement rods for locomotives being speeded up and rebalanced. These values are typical of replacement rod forgings recently tested by that company.

Quenched and tempered nickel steel forgings of this type provide high tensile strength and ductility, combined with unusual toughness and high fatigue strength—qualities which tend to obviate breakage when employed as rods in railroad service.

A booklet entitled, "NICKEL ALLOYS IN RAILWAY EQUIPMENT," describes important and varied uses of nickel steels and other alloys of nickel. Send for your copy today.

★ Nickel ★

THE INTERNATIONAL NICKEL COMPANY, INC., *67 Wall St., New York 5, N. Y.*

HOW TO HANDLE SCRAP *Faster*

KRANE KAR picks up a load, transports, and positions it. No need to maneuver the vehicle . . . swing the "live" boom from side to side or raise and lower it by power with full load on the magnet. For loading and unloading scrap at freight cars, handling bulky items around the yards, working at the scrap piles. Easy operation, safety features, stability, and speed enable Railroads to do the job with reduced manpower.

USERS: NY Central; B & O; C B & Q; Western Pacific; Pennsylvania; Canadian Pacific; C & O; D & H; Missouri-Pacific; Great Northern, etc.

See Our Exhibit at the POWER SHOW, Madison Square Garden, Nov. 27th - Dec. 2nd.

Agents in the Principal Cities

THE ORIGINAL SWING BOOM MOBILE CRANE WITH FRONT-WHEEL DRIVE AND REAR-WHEEL STEER

KRANE KAR FOR RAILROADS

SILENT HOIST & CRANE CO., 847 63RD ST., BROOKLYN 20, N.Y.

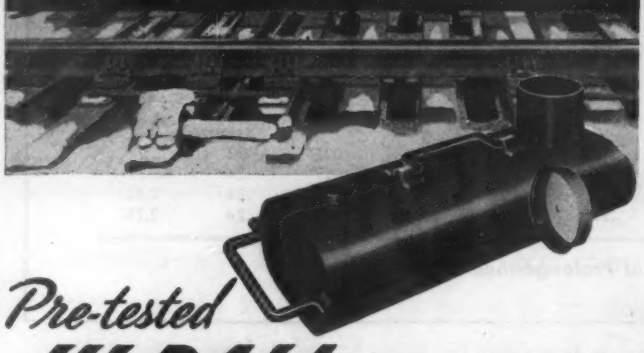
Cleveland's most friendly hotel is its most convenient one, too.

Hotel Cleveland

CLEVELAND, OHIO

Directly connected with Union Passenger Terminal

No Frozen Switches This Winter!

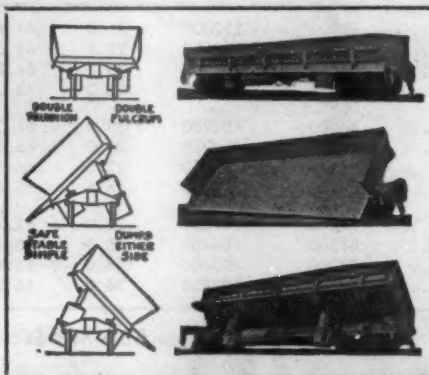


Pre-tested HI-BALL Switch Heaters

Keep your switches open this winter . . . decrease your winter maintenance man-hours . . . increase productive man-hours, and promote safety too, by using HI-BALL Switch Heaters. Positive, dependable, economical, a HI-BALL takes less than 1½ gallons of kerosene for 30 to 40 hours operation. HI-BALL is a self-contained unit, economically installed; low maintenance; low fuel consumption; no fire hazard; prevents flame blowouts; controls application of heat; can be serviced in daylight hours. Ask for information and prices NOW and install one for testing before winter sets in.

MISSISSIPPI SUPPLY COMPANY

89 Elmgrove Ave., Providence 6, R.I., Railway Exchange Bldg., Chicago 4, Ill.



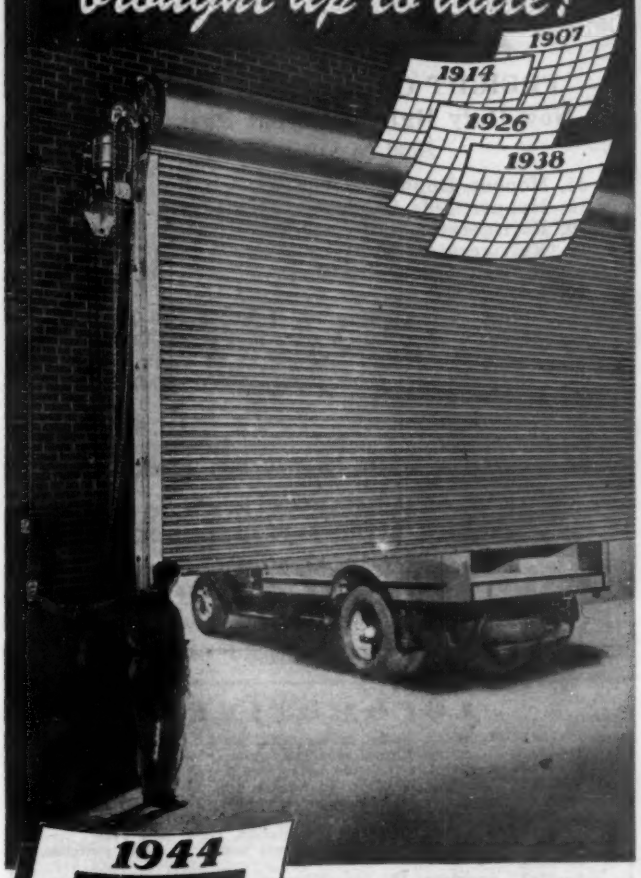
AIR DUMP CARS

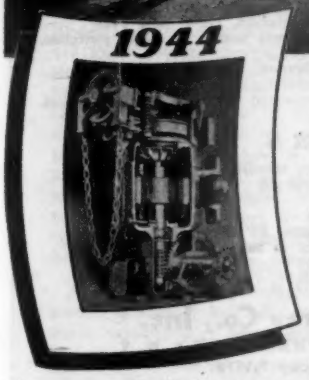
RAIL CARS
MINE CARS
AND
LOCOMOTIVES
AXLESS TRAINS
COMPLETE
HAULAGE SYSTEMS

DIFFERENTIAL STEEL CAR CO.
FINDLAY, OHIO

For Index to Advertisers
See Last White Page

Have YOUR DOORS been *brought up to date?*





with KINNEAR MOTOR OPERATION

Your doors *are* up to date if they're Kinnears—but are you getting all the added advantages of *Kinnear Motor Operation?* If not, look at the extra convenience and economy you can gain! By simply pressing a button you start these motorized doors up or down *instantly!* This quick, easy door control saves time and labor. Operation becomes so simple doors are not neglected—heating and air conditioning costs are greatly reduced. Motor operation also means *smoother* operation; doors are stopped automatically at top and bottom of the opening without slamming or rebound, reducing possibility of damage. And motor operation permits remote control; doors may be controlled from several advantageous points, and any number of doors may be controlled from a single point! Write today for further details on Kinnear Motor-Operated Rolling Doors! The Kinnear Mfg. Co., 2020-40 Fields Avenue, Columbus 16, Ohio.

Offices and Agents in all Principal Cities

KINNEAR
ROLLING DOORS

WRITE FOR THIS BOOKLET—

It May Help in Your Post War Plans

Unionair has had an important part in the design and production of electrical assemblies in our great aircraft program. The lessons learned, the experience gained, the new methods and discoveries made, have been recorded in this booklet so that they may be applied to post war production in any industry requiring electrical assemblies. This valuable booklet is yours for the asking. Write Union Aircraft Products Corp., Dept. RA, 245 East 23 St., New York 10, N. Y.

UNIONAIR

Electrical Assemblies—Hydraulic Fittings
Conduit Fittings—Junction Boxes
UNION AIRCRAFT PRODUCTS CORP., NEW YORK

GET TOGETHER DEPARTMENT

Educational Services for RAILROAD MEN

Our New Service on Diesel Locomotive Operation is highly recommended for Engineers and Firemen

The Railway Educational Bureau
Omaha 2, Nebraska

Railway Equipment
and accessories

We can furnish rails, spikes, bolts, angle bars, locomotives, cranes and other railway material. Write, wire or phone for prices.

Sonken-Galamba Corp.
106 N. 2ND STREET
Kansas City, Kans.

POSITION OPEN

Leading railroad equipment manufacturer is seeking a man for a permanent sales engineering position. He must be between 30 and 35 years of age, good education, and have had several years of railway signal experience. Give full particulars in reply which will be kept confidential. ADDRESS BOX 689, RAILWAY AGE, 30 Church Street, New York 7, N. Y.

WANTED

High Grade Sales Engineer for Passenger Car Building Field. Must be executive type and have excellent background of engineering experience. ADDRESS BOX 694, RAILWAY AGE, 30 CHURCH STREET, NEW YORK 7, N. Y.

Take advantage of space in this section

A Good Investment

FREIGHT CAR PRICES REDUCED!
Now Only Half of Recent Peak Prices—
$500 to $1950 Each!

55, Hopper, Double, 50-Ton
10, Hopper, Side Discharge, 50-Ton
100, Refrigerator, 40-Ft., 40-Ton
16, Refrigerator, 36-Ft., 30-Ton
14, Ballast, Composite, 50-Ton
25, Box, 26-Ft., 40-Ton
6, Dump, K & J Automatic, 30-Yd., 50-Ton
18, Dump, K & J Automatic, 16-Yd., 40-Ton
4, Dump, Western, 20-Yd., 40 & 50-Ton
1, Dump, Koppel Drop Door, 20-Yd., 40-Ton
20, Flat, 40-Ft., 50-Ton
33, Gondola, Composite, 36-Ft. & 40-Ft., 40-Ton
10, Gondola, Steel, 50-Ton, High Side
30, Tank, 8000-gallon, 40 & 50 Ton Trucks

All cars are priced to sell!

IRON & STEEL PRODUCTS, INC.
39 years' experience
13496 S. Brainard Ave. Chicago 33, Illinois
"ANYTHING containing IRON or STEEL"

LOCOMOTIVES

1—16x24 American 50-ton saddle tank, 0-4-0
1—19x26 American 67-ton, separate tender, new 1923
2—21x24 Baldwin 78-ton side tanks, 0-6-0, rebuilt
1—21x28 American, 85 ton, separate tender, 0-6-0
4—23x30 American, 114-ton separate tender, 2-8-0, exceptionally fine conditioned engines
1—23x32 Baldwin, 119 ton, Consolidation, 2-8-0, new 1920
1—25x30" American, 118 ton, separate tender, 8 wheel switcher, 0-8-0
5—28x32 American, 181 ton, Mikados, 2-8-2
1—20 ton Whitcomb 36" ga. Diesel locomotive, Rebuilt.
1—20 ton Plymouth, gasoline operated standard gauge. Excellent condition.

CARS

1—20 cu. yd. Western dump car, rebuilt
4—20 cu. yd. K&J dump cars, rebuilt
10—50-ton twin hopper coal cars
22—50-ton composite gondola cars
100—40-ton box cars, steel underframe, 36' long
1—Brill Model 55 comb. passenger & baggage car

WIRE WRITE PHONE

Thomas F. Carey Co., Inc.
120 LIBERTY STREET, NEW YORK 6, N. Y.
Telephone Barclay 7-1770

FOR SALE
SUBSTATION AND TROLLEY

1000 KW, 1500 Volt Westinghouse Railway Substation Complete Equipment consists of 2-500 KW, 750 Volt Synchronous Converters connected in series for 1500 Volts. Switchboards, Breakers, Transformer and outdoor disconnecting switches.

Transformer is 3 phase, 60 cycle, 33,000 Volt Primary, 550 Volt Secondary.

101,400 lbs. 4/0 grooved trolley wire @ .6405' per lbs.
53,500 lbs. 300,000 CM bare copper stranded wire .926' per lb.
26,400 ft. 3/8" Galv. Steel Stranded Cable.

Insulators, Hangers, and all hardware to make up approximately 17 miles of side arm trolley.

All equipment in A-1 condition.

Address: A. L. Kerper

THE RED RIVER LUMBER COMPANY
WESTWOOD, LASSEN COUNTY, CALIFORNIA

BUY WAR BONDS

STATEMENT of the ownership, management, circulation, etc., required by the Acts of Congress of August 24, 1912, and March 3, 1933, of *Railway Age, published weekly at Philadelphia, Pa., for October 1, 1944.*

State of New York } ss.
County of New York }

Before me, a *Notary Public* in and for the State and county aforesaid, personally appeared *Roy V. Wright,* who, having been duly sworn according to law, deposes and says that he is the *Managing Editor* of the *Railway Age* and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, as amended by the Act of March 3, 1933, embodied in section 537, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editors, and business managers are:

Publisher, Simmons-Boardman Publishing Corporation, 30 Church Street, New York, N. Y.
Editor, S. O. Dunn, 105 West Adams Street, Chicago, Ill.
Managing Editor, Roy V. Wright, 30 Church Street, New York, N. Y.

Business Managers, None.

2. That the owners are: Simmons-Boardman Publishing Corporation, 30 Church Street, New York 7, N. Y.; Stockholders of 1 per cent or more of the total amount of stock are: I. R. Simmons, 15 Hillcrest Dr., Pelham Manor, N. Y.; P. A. Lee, Hopatcong, N. J.; Henry Lee, Hopatcong, N. J.; E. G. Wright, 398 N. Walnut Street, East Orange, N. J.; S. O. Dunn, 105 West Adams Street, Chicago, Ill.; C. E. Dunn, 3500 Sheridan Blvd., Chicago, Ill.; L. B. Sherman, 375 Sheridan Road, Winnetka, Ill.; Mae E. Howson, 6922 Paxton Avenue, Chicago, Ill.; Spencer Trask & Company, 25 Broad Street, New York, N. Y. General Partners of Spencer Trask & Company are: Edwin M. Bulkley, 817 Fifth Avenue, New York, N. Y.; Acosta Nichols, Cold Spring Road, Oyster Bay, N. Y.; Cecil Barret, Bar Harbor, Me.; C. Everett Bacon, 16 Erwin Park, Montclair, N. J.; F. Malbone Blodget, 65 Patterson Ave., Greenwich, Conn.; Arthur G. Gilbert, 440 Park Avenue, New York, N. Y.; Henry S. Allen, 407 Highland Avenue, Orange, N. J.; William Kurt Beckers, 39 E. 79th Street, New York 16, N. Y.; Edwin M. Bulkley, Jr., 40 East 66th Street, New York 16, N. Y.; Charles F. Bryan, 83 Adams Street, Garden City, L. I., N. Y.; Harold H. Cook, 259 South Mountain Ave., Montclair, N. J.; Brittin C. Eustis, Old Chester Road, Essex Fells, N. J.; Anton Henry Rice, Jr., 1 Riverview Road, Irvington-on-Hudson, N. Y.; J. Streicher & Company, 2 Rector Street, New York 6, N. Y. Partners of J. Streicher & Company are Joseph Streicher; Ethel Streicher; and J. L. Streicher, all of 2 Rector Street, New York 6, N. Y.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: *None.*

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

ROY V. WRIGHT.

Sworn to and subscribed before me this 26th day of September, 1944.

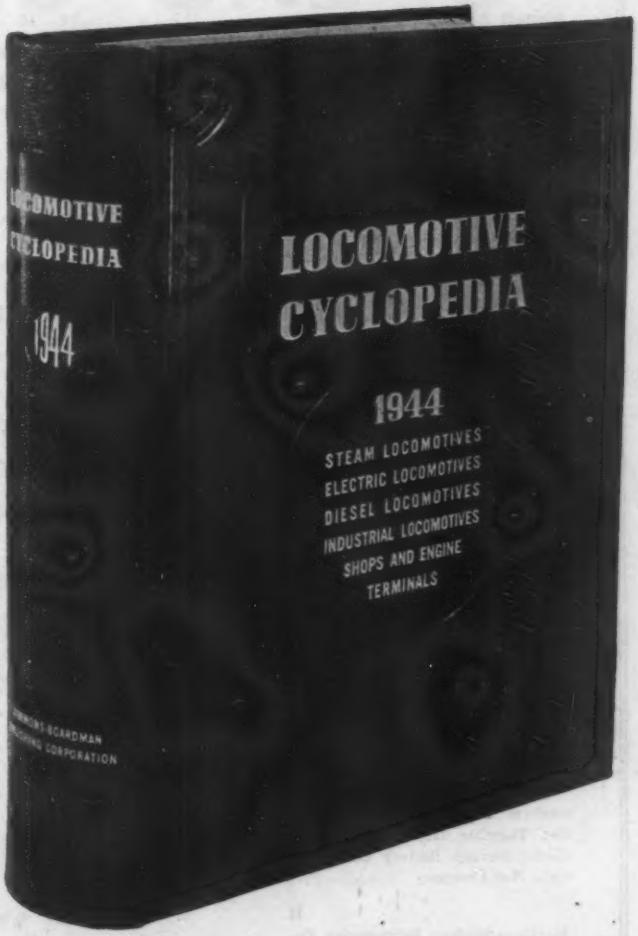
EDMUND J. PUYDAK.

[Seal] (My commission expires March 30, 1945.)

Announcing the

LOCOMOTIVE CYCLOPEDIA

Twelfth Edition



The Twelfth Edition of this well known book will be ready in November. Completely revised by a staff of experts it will contain 1,300 pages, 3,000 drawings and photographs, and 13 pages in full color. It will be 9x12x3½ inches in size, weigh 9 pounds, be bound in artificial leather and priced at $5.00 postpaid. Order a copy in advance on Ten Days' Approval.

FREE EXAMINATION COUPON

Simmons-Boardman Publishing Corporation
30 Church Street, New York 7, N. Y.

When ready, send me postpaid a copy of the new Twelfth Edition of the LOCOMOTIVE CYCLOPEDIA, on Ten Days' Free Examination. If satisfactory I will remit the list price of $5.00. Otherwise I will return the book without obligation.

Name .....

Address .....

City ..... State .....

Company ..... Position .....

(This offer is limited to retail purchasers in the United States and Canada) R.A. 44

Index to Advertisers

October 14, 1944

A

Aircraft Accessories Corporation 18, 19
American Arch Company 49
American Car and Foundry Company 6, 7
American Locomotive Co. 8, 9
American Optical Company 22
American Steel Foundries 23
American Steel & Wire Company 10, 11
Armco Railroad Sales Co., Incorporated 16

B

Baldwin Locomotive Works, The 56, 57
Buffelen Lumber & Mfg. Co. 24

C

Cardwell Westinghouse Co. 28
Carey Co., Inc., Thomas F. 64
Carnegie-Illinois Steel Corporation 10, 11
Caterpiller Tractor Co. 35
Chambersburg Engineering Co. 60
Clark Equipment Company 12
Cleveland Hotel 62
Columbia Steel Company 10, 11
Continental Machines, Inc. 13

D

Differential Steel Car Co. 62
Duryea Corporation, O. C. ..... Back Cover

E

Eaton Manufacturing Company, Reliance Division 2
Electronic Laboratories 17

F

Fairbanks, Morse & Co. 33
Franklin Railway Supply Co., Inc. 48

G

General Electric Company 8, 9, 26
Get Together Department 64
Gould Storage Battery Corporation 34
Grip Nut Company 21

H

Harbison-Walker Refractories Co. 49
Hunt-Spiller Mfg. Corporation 51

I

International Nickel Company, Inc., The 61
Iron & Steel Products, Inc. 64

K

Kerite Insulated Wire & Cable Company, Inc., The 20
Kinnear Mfg. Co., The 63

L

Lima Locomotive Works, Inc. 47

M

Magnus Metal Corporation 30
Miner, Inc., W. H. 3
Mississippi Supply Company 62
Morton Manufacturing Co. 36
Mt. Vernon Car Mfg. Co., Division of H. K. Porter Company, Inc. 4, 5

N

National Malleable and Steel Castings Co. 42
National Tube Company 10, 11

O

Ohio Locomotive Crane Co. 62
Okonite Company, The 46
Oliver Iron and Steel Corporation 38
Oxweld Railroad Service Company, The 29

P

Pettibone Mulliken Corporation 32
Pittsburgh Plate Glass Company 37
Porter Company, Inc., H. K. 4, 5

R

Rail Joint Company, Inc., The 14, 15
Railway Educational Bureau, The 64
Red River Lumber Company, The 64
Ryerson & Son, Joseph T. 66

S

Schaefer Equipment Company 40
Silent Hoist & Crane Co. 62
Simmons-Boardman Publishing Corp. 65
Sonken-Galamba Corp. 64
Statement of Ownership 65
Steel Founders' Society of America 25
Superheater Company, The 50

T

Teletype Corporation 39
Tennessee Coal, Iron & Railroad Company 10, 1
Timken Detroit Axle Co., The, Wisconsin Axle Division 27
Timken Roller Bearing Company ..... Front Cover

U

Union Aircraft Products Corp. 63
Union Carbide and Carbon Corporation 29
Union Switch & Signal Company 44, 54, 55
Unit Truck Corporation 67
United States Steel 10, 11

V

Van Der Horst Corporation of America 31

W

Washington Veneer Co. 24
Waugh Equipment Company 41
Western Electric Company 39
Westinghouse Air Brake Co. 52, 53
Westinghouse Electric & Manufacturing Company 58, 59

STEEL *in stock at* **RYERSON**

• Ryerson has the steel you need ready for immediate shipment. Ten convenient Ryerson plants stock more than ten thousand kinds, shapes and sizes of steel and allied products. Joseph T. Ryerson & Son, Inc. Plants at: Chicago, Milwaukee, St. Louis, Cincinnati, Detroit, Cleveland, Buffalo, Boston, Philadelphia, Jersey City.

Principal Products Include:

Structurals	Strip	Stainless	Babbitt, Solder
Stay Bolt Iron	Alloys	Mechanical Tubing	Reinforcing
Plates	Cold Finished Steel	Boiler Tubes	Nails, Rivets, etc.
Sheets	Tool Steel	Welding Rod	Machinery

UNIT TRUCK

INCREASED SALES PROVE ITS MERITS

Unit Trucks first exhibited at the A.A.R. Convention in Atlantic City, June 1937. Then tested in actual service for over two years and approved for interchange in January 1940. From that time on, applications of Unit Trucks have grown to the grand total of 25,875 sets.

Orders placed from 1937 to 1939	12 car sets
Orders placed to the end of 1940	730 car sets
Orders placed to the end of 1941	10,700 car sets
Orders placed to the end of 1942	15,000 car sets
Orders placed to the end of 1943	19,000 car sets
Orders placed, grand total to date	25,875 car sets

UNIT TRUCKS have—
Fewer parts, Less steel
Correct design, Lower maintenance

Approved for interchange.

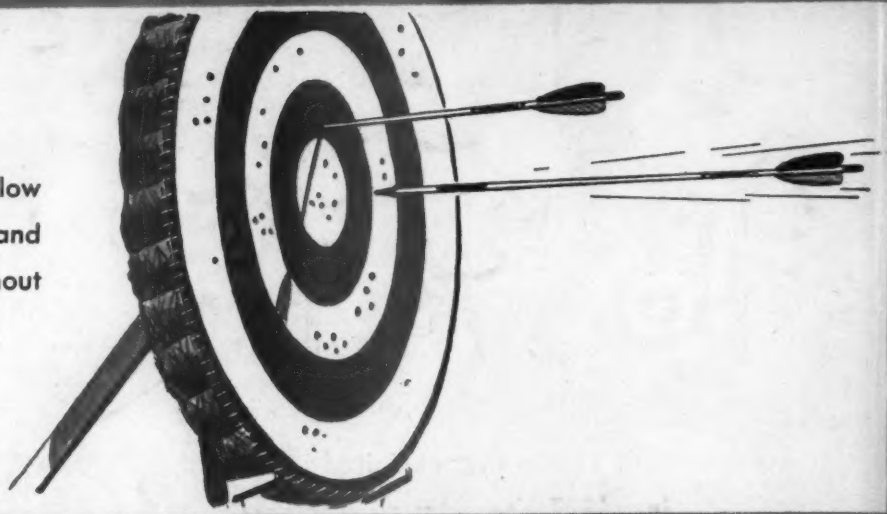
Full information as to licensees authorized to manufacture Unit Trucks will be furnished upon request.

UNIT TRUCK CORPORATION

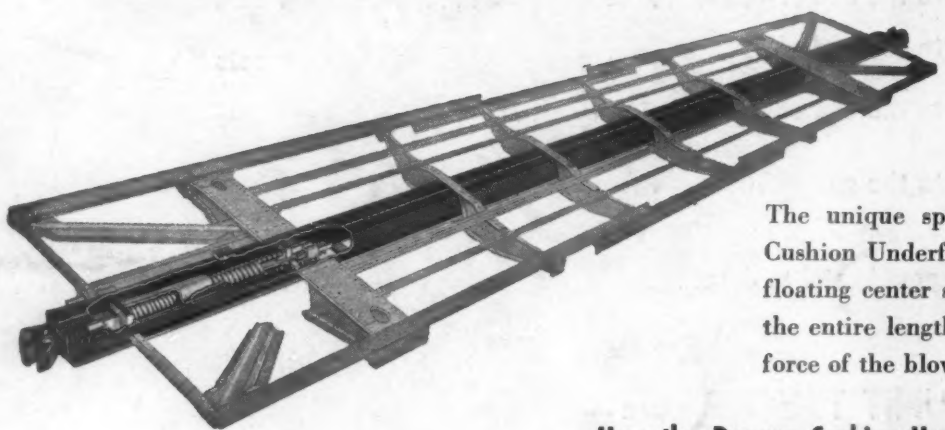
140 CEDAR STREET NEW YORK 6, N. Y.

Why doesn't it break the arrow?

CUSHIONING guards the blow . . . pillows the impact . . . and the arrow hits its mark without breaking off on contact.



MOVEMENT CUSHIONS THE SHOCK! The same principle, in the Duryea Cushion Underframe, gives you SHOCKPROOF SHIPPING



The unique spring arrangement of the Duryea Cushion Underframe subdues every jolt—and the floating center sills travel the shock of an impact the entire length of the car, largely absorbing the force of the blow.

How the Duryea Cushion Underframe Contributes to Victory

PROTECTS car and lading, prolongs car life, cuts damage claims.

PERMITS higher handling speeds.

ELIMINATES gear replacements maintaining efficiency for life of car.

SAVES TIME loading and unloading. Needs less packing and bracing.

SAVES MONEY usually spent for maintenance on every part of car.

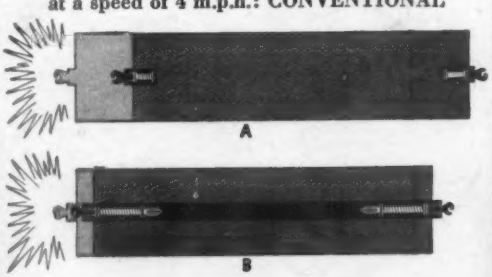
COMPLEMENTS air brake; Duryea cars withstand abrupt stops.

CUTS SLACK to pre-determined ideal.

COSTS NO MORE than conventional type, for average Duryea gear.

Here's what actually happens

. . . when two stationary freight cars receive the same impact, equivalent to a 50-ton car, loaded to capacity, coupling at a speed of 4 m.p.h.: CONVENTIONAL



CAR (A): Draft gear "goes solid," car receives almost entire impact.
DURYEA CAR (B): Shock absorbed by cushion gears, car and lading are comparatively undisturbed.

O. C. DURYEA CORPORATION
30 Rockefeller Plaza, New York 20, N. Y. - Field Building, Chicago 3, Ill.
725 Fifteenth Street, N. W., Washington 5, D. C.

DURYEA *Cushion* UNDERFRAM

FOR FREIGHT CARS

The Modern Safeguard For Shockproof Shippi